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INNOVATIVE INTERVENTIONS FOR SUBSTANCE USE REDUCTION AMONG NIGERIA'S YOUTH

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Abstract

This study investigates the effectiveness, perception, and operational feasibility of innovative, youth-centered interventions for substance use reduction in some selected states across three geo-political zones of Nigeria. Substance abuse among Nigerian youth specifically young adults aged 15–29 has evolved from an isolated social vice into a complex public health emergency that undermines human capital development, academic productivity, and national security. Conventional intervention frameworks in Nigeria have relied heavily on supply-reduction enforcement like arrests and prosecutions by NDLEA authorities or retributive institutional sanctions e.g., expulsion and rustication in cases involving institutions of learning. However, these traditional models fail to suppress dependency rates and frequently induce deep-seated social stigma. Utilizing a descriptive survey research design paired with a correlational framework, the study surveyed a total population of 84,250 young adults and registered undergraduate students across four selected public universities in Southwestern, North-Central and South-Eastern Nigeria. A multi-stage sampling technique was employed to draw a representative sample of 5,250

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respondents. Data collection was executed using a self-constructed 45-item instrument titled the Innovative Interventions for Youth Substance Use Questionnaire (IIYSURQ), structured on a 4-point Likert scale across six distinct clusters. Face and content validity were established by three experts in educational psychology, measurement, and public health, while a pilot study yielded an overall Cronbach's alpha reliability coefficient (α) of 0.88. Descriptive statistics (frequencies, percentages, means, and standard deviations) were utilized to answer four research questions, while inferential statistics (t-test for independent samples and Pearson Product-Moment Correlation Analysis) tested four research hypotheses at a 0.05 level of significance. Findings revealed that young people hold highly positive perceptions toward innovative, low-stigma models such as mobile-health (mHealth) psychoeducation platforms, peer-led cognitive-behavioral therapy (CBT) initiatives using the ABCDEF model, and community-based wellness hubs. However, there was no significant gender difference regarding technology-assisted interventions. Furthermore, a strong positive relationship ($r = 0.642, p < .005$) was established between perceived intervention accessibility and youth willingness to participate in campus rehabilitation. It is recommended that university management and youth policy stakeholders replace purely retributive disciplinary models with technology-assisted, peer-led restorative care systems.

Introduction

Substance use and chemical dependency among young people represent one of the most critical socio-economic and public health challenges facing contemporary Sub-Saharan Africa. In Nigeria, home to the largest youth population on the African continent, the transition through emerging adulthood—spanning ages 15 to 29—is increasingly characterized by heightened vulnerability to psychoactive substance exposure (Adesida et al., 2022; Arnett, 2019). While traditional substance use historically centered on alcohol, tobacco, and local cannabis, contemporary youth drug culture in Nigeria has shifted toward prescription opioids (e.g., tramadol, codeine-based cough syrups, rohypnol), synthetic cannabinoids ("Colorado"), volatile inhalants, and novel psychoactive substances (NPS) (Agberotimi et al., 2025; Musa et al., 2021). The pervasive availability of these substances across university communities, urban informal settlements, and transportation hubs has created a multifaceted crisis that impairs cognitive functioning, disrupts academic continuity, fuels campus cultism, and elevates rates of accidental mortality and mental health disorders (Alemika, 2018; Fabian, 2026).

The developmental stage of youth is marked by neurobiological maturation, particularly within the prefrontal cortex—the brain region responsible for executive function, impulse control, risk assessment, and long-term decision-making (Fabian, 2026). During this period, exposure to severe environmental stressors—such as systemic youth unemployment, socio-economic hardship, academic pressure, security anxieties, and persistent strike actions in public universities—drives many young Nigerians to utilize psychoactive substances as a maladaptive coping mechanism (Agberotimi et al., 2025; Ene et al., 2023). Furthermore, peer group consolidation and digital media exposure amplify substance experimentation. Social media platforms frequently glamorize drug culture, associating substance use with modern lifestyle status, artistic creativity, and emotional resilience (Agberotimi et al., 2025).

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Historically, the Nigerian state and its educational institutions have addressed youth substance abuse through supply reduction and retributive discipline. At the institutional level, tertiary campuses enforce zero-tolerance regulations characterized by immediate rustication, expulsion, and referral to law enforcement bodies like the National Drug Law Enforcement Agency (NDLEA) (Adebayo et al., 2022; Kerker & Adeyongo, 2024). While well-intentioned, empirical evidence indicates that purely punitive frameworks fail to curb consumption rates. Instead, they drive substance use further underground, foster deep-seated social stigma, and alienate struggling youths from institutional support systems (Aguocha & Nwefoh, 2021; Kerker & Adeyongo, 2024). Conventional guidance and counseling units across Nigerian universities remain underutilized because students fear that seeking help will result in academic termination or public shaming (Kerker & Adeyongo, 2024).

The inadequacy of traditional retributive approaches has catalyzed an urgent need for innovative interventions. In youth health and educational psychology, innovative interventions refer to low-cost, scalable, youth-centered, and technology-assisted frameworks designed to prevent, reduce, or treat substance dependency without relying on coercive punishment (Fabian, 2026; Mujeeb-Ur-Rehman et al., 2024). These models include mobile-health (mHealth) psychoeducation applications, web-based anonymous screening protocols, peer-led Cognitive Behavioral Therapy (CBT) modules—such as the structured ABCDEF model—and community-based wellness hubs integrated within university structures (Fabian, 2026; Kerker & Adeyongo, 2024).

Central to the success of any innovative intervention is the perception and acceptance of the target beneficiaries. According to the Health Belief Model and Social Cognitive Theory, an individual's decision to adopt health-seeking behaviors depends on their perception of the intervention's accessibility, confidentiality, social safety, and practical utility (Bandura, 2018; Rosenstock, 2020). If young people perceive innovative interventions as covert disciplinary tools, adoption rates will remain low. Conversely, when interventions are perceived as non-judgmental, digitally accessible, confidential, and culturally grounded, youth engagement increases significantly (Mujeeb-Ur-Rehman et al., 2024). While international literature demonstrates the efficacy of mHealth and cognitive-behavioral tools in high-income countries, there remains a shortage of empirical evidence regarding how West African youths—particularly Nigerian university students—perceive and interact with these modern intervention paradigms. Evaluating these perceptions is essential for institutional administrators, public health experts, and educational psychologists aiming to design sustainable, high-impact youth wellness policies.

Statement of the Problem

Despite continuous law enforcement operations and institutional prohibitions, substance abuse among Nigerian youth has reached epidemic proportions. Epidemiological assessments indicate that over 30% of Nigerian university students and out-of-school youths regularly misuse psychoactive substances, with prescription drug abuse (e.g., tramadol, codeine, and rohypnol) and synthetic cannabis variants rapidly surpassing conventional substances (Adesida et al., 2022; Aguocha & Nwefoh, 2021). The ongoing expansion of illicit drug networks within tertiary institution towns highlights a fundamental failure in traditional intervention approaches.

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For decades, Nigerian tertiary institutions and youth agencies have relied almost exclusively on punitive deterrence—public shaming, academic rustication, immediate expulsion, and criminal prosecution. Rather than suppressing substance reliance, these reactive measures create an environment of fear and secrecy. Youths struggling with chemical dependency conceal their habits to avoid life-altering academic and legal consequences, effectively cutting themselves off from professional psychological care (Ene et al., 2023; Kerker & Adeyongo, 2024). Furthermore, campus guidance and counseling units across the nation remain severely underfunded, understaffed, and dependent on outdated, face-to-face therapeutic formats that fail to engage a digitally connected youth demographic (Kerker & Adeyongo, 2024).

While globally recognized innovative interventions such as mHealth psychoeducation apps, peer-led cognitive behavioral therapy (CBT), anonymous digital screening tools, and non-punitive campus wellness hubs, offer viable alternatives, their deployment in Nigeria faces a major obstacle: a lack of empirical data regarding youth perception, readiness, and structural preferences.

The majority of existing West African studies focus on the prevalence, patterns, and socio-demographic correlates of drug abuse (Ajayi & Somefun, 2020; Okoro & Lahai, 2021), while providing limited empirical evaluation of modern intervention frameworks. It remains unknown whether Nigerian youths perceive digital health tools as trustworthy and secure, how gender disparities influence intervention preferences, or whether perceived accessibility directly correlates with a willingness to participate in campus-based rehabilitation. Deploying intervention technologies without understanding user perceptions risks low adoption rates, wasted resources, and continued youth alienation. Therefore, this study addresses this problem by empirically investigating youth perceptions, structural barriers, gender dynamics, and participation readiness regarding innovative substance use reduction interventions across selected Nigerian tertiary institutions. This study fills a critical empirical gap by shifting the West African higher education literature from observational prevalence tracking to actionable, evidence-based intervention science.

Innovative and Preventive Approaches to Substance Use Reduction among Nigerian Youth

Substance use among young people represents a significant public-health, educational, psychological, and social concern. The youth period is characterised by rapid biological, emotional, cognitive, and social development, increasing independence, experimentation, and greater exposure to peer networks. These developmental characteristics may increase vulnerability to alcohol, tobacco, cannabis, pharmaceutical opioids, stimulants, and other psychoactive substances. In Nigeria, the problem is particularly important because substance use occurs within a context of rapid demographic change, unemployment, social inequalities, mental-health challenges, peer influence, availability of psychoactive substances, and uneven access to preventive and treatment services. The Nigerian National Survey on Drug Use and Health estimated that 14.4% of Nigerians aged 15–64 years had used a psychoactive drug other than alcohol and tobacco during the preceding year, representing approximately 14.3 million people. Cannabis, opioids, and cough syrups were among the substances reported most frequently (National Bureau of Statistics [NBS] & United Nations Office on Drugs and Crime [UNODC], 2019).

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The scale and complexity of the problem create a need for interventions that go beyond conventional drug education. Traditional prevention programmes have frequently relied on providing information concerning the dangers of drugs, warning young people about legal consequences, or using anti-drug campaigns. Although knowledge is an important component of prevention, evidence increasingly indicates that effective interventions need to address the multiple individual and environmental factors associated with substance-use initiation and continuation. The International Standards on Drug Use Prevention emphasise a risk-and-protective-factor framework in which interventions address individual characteristics as well as family, school, peer, community, and wider environmental influences (UNODC & World Health Organization [WHO], 2018).

This perspective provides a useful conceptual foundation for understanding innovation in substance-use prevention. An intervention can be regarded as innovative when it introduces a new or substantially improved way of identifying risk, communicating with young people, providing counselling, strengthening protective factors, modifying social environments, or connecting vulnerable individuals with appropriate services. Innovation therefore does not necessarily mean technology. Peer counselling, student-led prevention, family-based intervention, community outreach, restorative approaches, digital counselling, personalised feedback, and integrated mental-health and substance-use services can all constitute innovative interventions.

Evidence from Sub-Saharan Africa demonstrates the need for locally appropriate prevention strategies. Aceves-Martins et al. (2021) systematically reviewed substance-use prevention interventions for children and young people in Sub-Saharan Africa and found substantial variation in intervention types and implementation contexts. The review highlighted the importance of developing interventions that are appropriate to the social and cultural circumstances of African communities rather than assuming that interventions developed in high-income countries will automatically transfer successfully.

More recent evidence concerning Nigerian adolescents similarly indicates that substance-use behaviour is influenced by multiple factors. Ekpenyong et al. (2024), in a systematic review of tobacco and alcohol use among Nigerian adolescents and young adults, emphasised the importance of understanding the factors influencing use when designing health-promoting interventions. The review also cautioned that studies restricted to school populations may fail to capture the experiences of young people who are outside formal educational settings.

This observation has important implications for innovative interventions. A prevention strategy focused only on schools may fail to reach unemployed youth, school dropouts, apprentices, out-of-school adolescents, and other vulnerable populations. A comprehensive approach should therefore combine school and university programmes with community outreach, youth centres, primary healthcare, social-media communication, family interventions, and community-based counselling.

Another important characteristic of innovative interventions is their emphasis on early prevention. Interventions should ideally begin before problematic substance use becomes established. Universal prevention can target all young people, selective prevention can focus on groups with elevated risk, and indicated interventions can address young people who already demonstrate early signs of substance-related problems. The WHO and UNODC prevention standards support a

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continuum of evidence-informed prevention strategies that correspond to developmental stages and levels of risk (UNODC & WHO, 2018).

Innovation is also connected to participation. Young people should not merely be recipients of interventions but should contribute to programme development, implementation, and evaluation. Youth participation can improve intervention relevance because young people understand the social contexts in which substance use occurs, including peer pressure, parties, social media, academic stress, relationships, and recreational environments. Student and youth participation may also improve ownership and reduce perceptions that prevention programmes are imposed by authorities.

The concept of youth-centred innovation is particularly relevant to Nigeria because the country's youth population is large and diverse. Interventions designed for urban university students may not be appropriate for rural adolescents, while interventions appropriate for secondary-school students may not address the needs of unemployed young adults. Therefore, innovative interventions should be culturally responsive, age-appropriate, accessible, confidential, and adaptable.

The education sector provides an especially important platform. UNESCO, UNODC, and WHO have emphasised that schools and other educational institutions have an important responsibility in protecting young people from substance-related harms and promoting healthy development (UNESCO, UNODC, & WHO, 2017). Recent reviews likewise show that educational interventions may incorporate cognitive-behavioural skills, peer interventions, family-school cooperation, physical activity, and electronic interventions (Liu et al., 2023).

Consequently, innovative interventions for Nigerian youth should be understood as multidimensional and preventive rather than merely informational. Their effectiveness depends on the extent to which they address risk and protective factors, engage young people, involve families and communities, provide accessible counselling, and respond to emerging forms of substance use. The present article is therefore situated within an evolving literature that seeks to identify interventions capable of responding to the changing nature of youth substance use in Nigeria.

Digital and Technology-Enabled Interventions for Substance Use Reduction among Nigerian Youth

Digital technology has created new opportunities for substance-use prevention, early intervention, counselling, education, screening, monitoring, and recovery support. Young people increasingly use smartphones, social-media platforms, websites, messaging applications, and other digital technologies as part of their everyday lives. These technologies therefore provide potentially valuable channels for delivering substance-use interventions to populations that may be reluctant to attend traditional counselling centres.

Digital interventions can take several forms. They may include online psychoeducation, smartphone applications, digital screening instruments, personalised feedback, text-message interventions, online motivational interviewing, web-based cognitive-behavioural therapy, virtual counselling, online peer-support groups, social-media campaigns, and digital referral systems. Their principal advantages include accessibility, scalability, flexibility, potential anonymity, and the ability to provide support outside conventional service hours.

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Recent evidence provides growing support for digital approaches. O'Logbon et al. (2024) conducted a systematic review and meta-analysis of digital health technologies for reducing substance use among young people. The review found evidence of small beneficial effects, although the magnitude of effects varied across technologies and substances. The authors emphasised that digital interventions show promise but that their effectiveness should be interpreted in relation to the specific intervention and outcome being evaluated.

Digital interventions are particularly relevant to emerging adults because they can be integrated into environments in which young people already communicate. Rather than requiring a young person to identify themselves publicly as having a substance-use problem, a digital intervention can begin with anonymous screening or self-assessment. Personalised feedback can then provide information about risk and encourage appropriate behaviour change.

Digital cognitive-behavioural therapy represents another important development. Gregory et al. (2024) systematically reviewed randomised controlled trials of digital CBT for substance use. CBT-based interventions can help users identify triggers, recognise maladaptive thoughts, develop alternative coping mechanisms, manage cravings, and plan for high-risk situations. The digital format allows these components to be delivered through structured online modules or applications while potentially providing links to professional counselling.

Recent research specifically addressing adolescents and emerging adults demonstrates the scale of digital innovation. A comprehensive scoping review identified 176 studies of digital intervention components for substance-use prevention or reduction among people aged 12–21 years. Most interventions were delivered in educational settings, and universities and schools accounted for a substantial proportion of intervention contexts. Web-based delivery was particularly common. However, the review noted that interventions often combine multiple theoretical components, making it difficult to determine which individual components are responsible for observed effects (Kiefer et al., 2026).

This observation has important implications for Nigerian intervention development. A digital intervention should not simply transfer information from printed pamphlets to a website. Effective digital interventions can incorporate behaviour-change principles, personalised feedback, social-norm information, motivational exercises, self-monitoring, goal setting, reminders, and opportunities to contact professional counsellors.

The implementation of digital interventions, however, requires attention to contextual factors. Fernández-León et al. (2025) examined planning, implementation, evaluation, and sustainment of digital health interventions for adolescent substance-use prevention using the RE-AIM framework. Their review demonstrated that implementation depends on factors beyond intervention efficacy, including reach, adoption, implementation quality, and maintenance.

This is particularly important in Nigeria. Digital interventions may be attractive because they can reach young people across geographically dispersed communities, but digital access is not uniform. Internet costs, smartphone ownership, electricity supply, network quality, digital literacy, privacy, and language can influence utilisation. Consequently, technology should be incorporated in ways that recognise Nigeria's digital inequalities.

Digital interventions also raise questions about confidentiality and safety. Young people may disclose substance dependence, suicidal ideation, overdose risk, violence, or severe psychological

distress during online screening. Digital programmes therefore need clear referral pathways to qualified professionals. The WHO and UNODC standards emphasise that effective treatment systems should include appropriate treatment settings, modalities, and interventions and should be organised according to evidence-based and ethical principles (WHO & UNODC, 2020).

Another advantage of digital interventions is the possibility of continuous engagement. Traditional prevention may involve a single workshop, seminar, or campaign. Digital systems can provide repeated reminders, periodic self-assessment, educational content, and follow-up. This continuity may be useful because behaviour change often requires repeated exposure and reinforcement.

Social media also provides an important prevention platform. Young people can encounter both harmful and protective substance-related messages online. Prevention programmes can use social-media platforms to challenge misconceptions, provide accurate information, promote healthy lifestyles, publicise counselling services, and encourage help-seeking. However, online prevention should avoid fear-based or stigmatising communication because such messages may reduce trust and discourage engagement.

For Nigeria, a hybrid digital model may be particularly appropriate. Such a model could combine online screening with professional counselling, digital psychoeducation with peer support, and mobile follow-up with face-to-face treatment. Students or young people who require intensive treatment could be referred to specialised services while those with lower-risk patterns could receive brief digital interventions and monitoring.

Digital technology should therefore be regarded as a delivery mechanism rather than an intervention in itself. Its value depends on what therapeutic or preventive content it delivers, how appropriately it is designed, and whether users can access additional support when necessary.

The literature consequently supports the inclusion of digital interventions within research on innovative substance-use reduction among Nigerian youth. However, there remains limited Nigerian evidence evaluating how young people perceive and utilise digital substance-use interventions. This creates an important area for research, particularly concerning acceptability, confidentiality, accessibility, cultural relevance, technological barriers, and willingness to seek help through digital platforms.

Peer Education, Peer Counselling, and Youth-Led Interventions

Peer influence is a major component of young people's social development and can operate as either a risk or protective factor in relation to substance use. Young people often obtain information about drugs from friends and may initiate substance use through peer networks. Consequently, peer-based prevention represents an important innovative approach because it attempts to redirect the influence of peer networks towards healthier behaviours.

Peer interventions may involve peer education, peer counselling, student ambassadors, recovery mentors, youth clubs, drug-free clubs, peer-led awareness campaigns, peer support groups, and peer referral systems. Their underlying principle is that young people may respond positively to messages from individuals who share similar experiences, age groups, educational environments, and social contexts.

Recent Nigerian evidence provides particularly important support for peer intervention. Emerole et al. (2026) conducted a quasi-experimental study among university students in Owerri, Imo State,

and found that a structured peer health-education programme was associated with significant reductions in alcohol consumption. The intervention involved trained peer educators and repeated educational activities and was informed by social-learning and behavioural-change principles.

Although the study focused on university students rather than the entire Nigerian youth population, its implications extend to youth interventions more broadly. It demonstrates that young people can be trained to participate systematically in health promotion rather than being treated solely as recipients of prevention messages.

Peer education may operate through several mechanisms. First, peers can provide credible social information. Second, they can model healthy behaviour. Third, they can challenge perceptions that substance use is universally accepted among young people. Fourth, they can facilitate communication between students and professional counsellors. Fifth, they can create social environments in which abstinence or responsible behaviour becomes more socially acceptable.

The International Standards on Drug Use Prevention support interventions that develop personal and social competencies among children and young people (UNODC & WHO, 2018). Peer education can contribute to this goal by providing opportunities for communication, leadership, decision-making, resistance to social pressure, and problem-solving.

Peer interventions may also address stigma. Some young people may hesitate to approach counsellors because they fear being labelled as drug users. A trained peer ambassador can serve as an initial point of contact and direct individuals towards professional services without requiring immediate public disclosure. However, confidentiality should be carefully protected, and peer educators must understand their ethical limits.

Peer counselling should therefore not be understood as a replacement for professional counselling. Young people with serious substance-use disorders may require psychological, medical, psychiatric, or rehabilitation services. Peer workers can provide encouragement and navigation but should operate under appropriate professional supervision.

The Nigerian context also provides evidence concerning peer-related risk factors. Studies among Nigerian adolescents and young adults have identified peer influence as an important factor associated with substance use. Ekpenyong et al. (2024), in their systematic review of tobacco and alcohol use among Nigerian adolescents, emphasised the importance of understanding the factors influencing youth substance-use behaviour.

This suggests that interventions should not simply tell young people to "avoid bad friends." Instead, prevention can actively strengthen positive peer networks. Universities, secondary schools, youth organisations, and community programmes can establish peer-support groups, drug-free clubs, sports organisations, academic mentoring groups, and youth leadership programmes.

Drug-free clubs represent a potentially useful Nigerian model. Such clubs can provide alternative recreational activities, awareness campaigns, peer counselling, referral to professional services, and social-support networks. They may be particularly effective when students participate voluntarily and perceive the activities as supportive rather than disciplinary.

Peer interventions can also be integrated with social media. Trained youth ambassadors may produce accurate educational materials, organise online discussions, share information about

counselling services, and challenge misinformation. Such approaches can expand the reach of peer education beyond physical meetings.

Nevertheless, the selection and training of peer educators are crucial. Peer educators should demonstrate maturity, communication skills, confidentiality, empathy, and commitment to healthy behaviour. Training should cover substance-use knowledge, basic counselling skills, motivational communication, stigma reduction, confidentiality, safeguarding, referral, and crisis recognition.

Supervision is equally important. Without supervision, peer educators may provide inaccurate advice, breach confidentiality, or attempt to manage problems beyond their competence. A professional counsellor or trained health professional can supervise peer programmes and provide referral pathways.

The recent Nigerian evidence from Owerri is particularly relevant because the intervention was structured rather than informal. Emerole et al. (2026) demonstrated that peer education can be operationalised as a systematic intervention with defined educational activities and measurable outcomes.

International evidence also supports educational and peer approaches within school environments. Liu et al. (2023) reviewed substance-use interventions in educational settings and identified peer interventions among approaches that can contribute to reducing adolescent substance-use problems. Similarly, Cadri et al. (2024) reviewed school-based substance-use interventions in LMICs and highlighted the importance of contextual factors affecting implementation.

For Nigerian youth, peer intervention is therefore potentially valuable because it directly addresses the social environment in which substance-use behaviour develops. However, the effectiveness of peer programmes depends on adequate training, supervision, institutional support, confidentiality, and referral systems.

The literature thus supports peer education and peer counselling as significant components of innovative youth substance-use reduction. Future Nigerian studies should examine not only whether peer interventions are available but also whether young people perceive them as credible, confidential, culturally appropriate, accessible, and effective.

Counselling, Psychosocial, Family, and School-Based Interventions

Professional counselling and psychosocial intervention remain central to substance-use reduction even as new technologies and peer-based strategies emerge. Innovative intervention should not be interpreted as a replacement for established counselling approaches. Instead, innovation can involve improving the way evidence-based counselling is delivered, integrating counselling with other services, and adapting interventions to the developmental and cultural characteristics of Nigerian youth.

The WHO and UNODC International Standards for the Treatment of Drug Use Disorders emphasise evidence-based, ethical, accessible, and person-centred treatment systems (WHO & UNODC, 2020). This principle is important because youth with substance-use problems differ considerably in terms of severity, motivation, family environment, mental health, social circumstances, and treatment needs.

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Counselling interventions may include motivational interviewing, cognitive-behavioural therapy, individual counselling, group counselling, family counselling, relapse-prevention counselling, problem-solving, emotional-regulation training, and psychoeducation. These interventions can be adapted to universal, selective, and indicated prevention.

Motivational interviewing is especially relevant to young people who are ambivalent about changing their substance-use behaviour. Rather than relying on confrontation, counsellors can help young people explore the advantages and disadvantages of substance use, examine discrepancies between current behaviour and personal goals, and develop their own reasons for change.

Cognitive-behavioural approaches similarly provide practical strategies for managing triggers and developing healthier coping responses. Young people can learn to identify situations that increase the likelihood of substance use, challenge unhelpful thoughts, develop alternative responses, and plan for high-risk situations. Digital CBT can extend these techniques to online environments (Gregory et al., 2024).

Family-based interventions are particularly important because young people's behaviour is influenced by family relationships. The UNODC/WHO prevention standards emphasise family-based interventions because family relationships can function as both risk and protective factors (UNODC & WHO, 2018).

Family interventions may involve parent education, communication training, monitoring, emotional support, conflict resolution, and strengthening family relationships. In Nigeria, where family and extended-family networks remain important social structures, family-sensitive interventions may provide useful protective support.

School and educational institutions are equally important. Educational settings provide structured access to large numbers of young people and possess human and institutional resources that can facilitate prevention. Liu et al. (2023) identified several categories of educational interventions, including cognitive-behavioural curriculum interventions, peer interventions, family-school cooperation, exercise interventions, and electronic interventions.

Whole-school approaches provide another innovation. Melendez-Torres et al. (2023) reviewed interventions designed to increase students' commitment to school and found evidence that whole-school approaches can produce small but significant effects on substance use and related outcomes. Such interventions can involve student participation in decision-making, stronger staff-student relationships, improved engagement with learning, and parental involvement.

This evidence suggests that substance-use prevention does not necessarily need to focus directly on drugs. Strengthening students' sense of belonging, academic engagement, relationships with teachers, and participation in school life may indirectly reduce vulnerability to substance use.

The importance of contextual adaptation is particularly evident in LMICs. Cadri et al. (2024) found that school-based substance-use interventions in LMICs varied substantially in their content, implementation, and evaluation. This suggests that Nigerian interventions should be adapted to local cultural, educational, economic, and social conditions.

Another important issue is stigma. Young people may avoid counselling because they fear being labelled as addicts or morally irresponsible. Counselling services therefore need to emphasise confidentiality, respect, non-judgmental communication, and voluntary engagement where

clinically appropriate. Universities and schools should also clearly distinguish counselling from disciplinary processes.

The treatment gap in Nigeria further strengthens the case for expanding counselling. A recent systematic review of barriers to substance-abuse treatment among Nigerian youth identified inadequate funding, uneven distribution of treatment centres, limited awareness of services, poor staffing, policy weaknesses, stigma, and beliefs in alternative treatment as important barriers (Alamukii, 2026).

This finding suggests that simply increasing the number of counselling programmes may not be sufficient. Interventions must also address the structural factors that determine whether young people can access and continue using services. Counselling can be integrated into primary healthcare, schools, universities, youth centres, community organisations, and digital platforms to increase accessibility.

Brief intervention represents another promising strategy. Young people who have begun using substances but have not developed severe dependence may benefit from screening, personalised feedback, motivational counselling, and follow-up. Such interventions can provide an opportunity to intervene before substance use becomes more entrenched.

An integrated counselling model could therefore include: Early identification and screening; individual counselling; group counselling; motivational interviewing; cognitive-behavioural strategies; family counselling; peer support; relapse prevention; digital follow-up; referral to specialised services; and long-term recovery monitoring. This model recognises that substance use is a complex behaviour rather than simply a knowledge deficit.

For Nigerian youth, professional counsellors have an important role in coordinating these components. Counsellors can assess risk, provide psychosocial interventions, supervise peer educators, facilitate family engagement, deliver digital counselling, organise support groups, and coordinate referrals. Thus, innovative interventions should strengthen rather than marginalise professional counselling. The literature supports a movement towards integrated, youth-centred, psychosocially informed, and accessible counselling systems. The remaining research need concerns how these interventions can be adapted and implemented effectively within Nigeria's diverse youth populations.

Community-Based, Integrated, and Sustainable Models for Substance Use Reduction among Nigerian Youth

A growing body of literature suggests that youth substance use cannot be effectively addressed through isolated interventions. Young people's substance-use behaviour emerges from interactions among individual characteristics, families, peer groups, schools, communities, economic circumstances, and broader social environments. Consequently, sustainable intervention requires an integrated approach that addresses multiple levels simultaneously.

The WHO and UNODC prevention standards explicitly adopt a multiple-risk-and-protective-factor perspective. They recognise that vulnerability to substance use can arise from individual, family, school, peer, community, and wider environmental factors and that prevention interventions should address these factors in complementary ways (UNODC & WHO, 2018).

This framework is particularly applicable to Nigeria. National data show considerable drug use among people of working and reproductive age, with substantial use of cannabis and pharmaceutical opioids (NBS & UNODC, 2019). At the same time, young people encounter substance-use risks through social networks, entertainment environments, informal drug markets, family circumstances, and psychological distress.

A community-based model can therefore bring together schools, universities, families, youth organisations, healthcare providers, religious institutions, community leaders, NGOs, counsellors, and government agencies. Each stakeholder can perform complementary functions.

For example, schools and universities can provide prevention education, screening, counselling, peer programmes, and referral. Primary healthcare centres can provide early identification and brief intervention. Families can provide social support and monitoring. Community organisations can conduct outreach and reduce stigma. NGOs can support vulnerable populations. Professional counsellors can provide psychosocial intervention and coordinate care.

The importance of community involvement is supported by evidence from Sub-Saharan Africa. Aceves-Martins et al. (2021) found considerable diversity in youth substance-use prevention interventions across the region, highlighting the importance of context-sensitive approaches. The findings suggest that intervention development should consider local resources, cultural practices, institutional structures, and community participation.

Sustainability is another central issue. An intervention may produce positive results during a research trial but fail to continue once research funding ends. Sustainable programmes require institutional ownership, trained personnel, stable financing, monitoring systems, policy support, and mechanisms for continuous improvement.

Recent evidence concerning digital interventions illustrates this point. Fernández-León et al. (2025) found that the success of digital adolescent substance-use prevention depends on factors affecting reach, adoption, implementation, effectiveness, and maintenance. Therefore, Nigerian programmes should not focus exclusively on whether an intervention works under controlled conditions; they should also examine whether schools, universities, communities, counsellors, and young people can maintain it over time.

The same principle applies to peer programmes. The 2026 Nigerian peer-health-education study demonstrates that trained peers can contribute to reducing alcohol consumption among university students (Emerole et al., 2026). For such programmes to become sustainable, however, universities would need systems for recruiting, training, supervising, replacing, and supporting peer educators.

Integrated digital and face-to-face interventions may offer another sustainable model. Digital systems can provide large-scale information, screening, personalised feedback, reminders, and follow-up, while professional counsellors can provide more intensive intervention for students identified as requiring additional support. This can potentially increase service reach while reserving specialist resources for higher-risk individuals.

The literature also supports the principle of stepped care. Not every young person who experiments with alcohol or another substance requires residential treatment. Universal prevention may be appropriate for the general youth population; brief interventions may be appropriate for individuals with emerging risks; structured counselling may be appropriate for

more persistent problems; and specialist treatment may be necessary for severe substance-use disorders.

Such a model can increase efficiency and reduce unnecessary barriers to care. It also supports early intervention before substance use becomes severe.

Community-based approaches must also address stigma. Alamukii (2026) identified stigma and lack of awareness among barriers affecting successful substance-abuse treatment among Nigerian youth. Community awareness programmes can therefore emphasise substance use as a health, psychological, and social issue rather than solely a moral or criminal problem.

At the same time, community intervention should recognise legitimate public-safety concerns. Sustainable prevention requires collaboration among health, education, social welfare, community, and relevant government agencies. However, prevention and counselling should remain evidence-informed and focused on reducing harm and promoting recovery.

An integrated Nigerian youth intervention framework could therefore be conceptualised around seven components:

First, prevention and health education. Young people receive developmentally appropriate information and skills concerning substance use, mental health, decision-making, stress management, and peer pressure.

Second, early identification. Schools, universities, primary healthcare centres, and youth organisations use appropriate screening mechanisms to identify emerging problems.

Third, professional counselling. Qualified counsellors provide individual, group, motivational, cognitive-behavioural, and family interventions.

Fourth, peer support. Trained youth and student peer educators provide information, social support, and referral.

Fifth, digital intervention. Young people receive online education, screening, personalised feedback, digital CBT, reminders, and access to counselling.

Sixth, family and community engagement. Families, community organisations, youth groups, and relevant institutions contribute to prevention and recovery.

Seventh, referral and continuing care. Young people with more serious substance-use problems are referred to appropriate specialised services, with follow-up to promote continuity.

This integrated model is consistent with WHO/UNODC treatment principles, which emphasise evidence-based treatment systems, appropriate settings and modalities, and continuity of care (WHO & UNODC, 2020).

Synthesis of the Literature and Research Gap

The literature reviewed demonstrates that innovative substance-use reduction among Nigerian youth is increasingly moving towards multilevel, participatory, technology-enabled, counselling-oriented, and community-integrated interventions. Five major conclusions emerge.

First, youth substance use is influenced by multiple individual and environmental factors, making single-component interventions insufficient.

Second, digital technologies provide new opportunities for reaching young people, although digital interventions must address access, privacy, implementation, and cultural adaptation.

Third, peer education can harness existing social networks and has emerging empirical support in Nigeria, including recent evidence from university students in Imo State (Emerole et al., 2026).
Fourth, professional counselling remains essential and can be strengthened through motivational, cognitive-behavioural, family, group, digital, and referral-based approaches.
Fifth, sustainable intervention requires integration across schools, universities, families, healthcare systems, communities, and youth organisations.
Despite these developments, an important Nigerian research gap remains. Existing research has substantially documented the prevalence, patterns, risk factors, and treatment barriers associated with youth substance use, but there is comparatively limited empirical research systematically examining innovative interventions as a coordinated category of prevention and reduction strategies. The evidence base is also uneven regarding how young people perceive the acceptability, accessibility, relevance, confidentiality, feasibility, and sustainability of different innovative interventions.
This gap provides a strong rationale for the article "Innovative Interventions for Substance Use Reduction among Nigeria's Youth." The study can contribute by examining which innovative approaches are available or perceived as appropriate, how youth respond to them, and what factors may facilitate or constrain their implementation within Nigerian communities and educational institutions.

Objectives of the Study

The primary objective of this study is to investigate innovative interventions for substance use reduction among Nigerian youth, specifically university undergraduates. The specific objectives are to:

1. Assess youth perceptions regarding peer-led digital psychoeducation applications for substance use reduction.
2. Determine student perceptions concerning the integration of the ABCDEF Cognitive-Behavioral Therapy (CBT) model into campus wellness centers.
3. Evaluate gender differences in how young people perceive anonymous, technology-assisted substance use interventions.
4. Examine the relationship between perceived accessibility of innovative interventions and youth willingness to participate in campus-based reduction programs.

Research Questions

1. What are the perceptions of Nigerian university youths regarding the use of peer-led digital psychoeducation applications for substance use reduction?
2. How do young people perceive the integration of the ABCDEF Cognitive-Behavioral Therapy model into standard university health services?
3. What is the difference between male and female university youths in their perceptions of technology-assisted substance use interventions?
4. What is the relationship between the perceived accessibility of innovative interventions and youth willingness to participate in campus-based reduction programmes?

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Hypotheses

HO_1**:** There is no significant difference between the mean perception scores of federal and state university youths regarding peer-led digital psychoeducation applications.

HO_2**:** There is no significant difference between male and female youths' perception scores concerning the integration of the ABCDEF Cognitive-Behavioral Therapy model into campus wellness services.

HO_3**:** There is no statistically significant difference between male and female university youths in their overall perception of technology-assisted, anonymous substance use interventions.

HO_4**:** There is no significant relationship between the perceived accessibility of innovative interventions and youth willingness to participate in campus-based substance reduction programs.

Research Design

This study utilizes a descriptive survey research design paired with a correlational framework. This design allows the researcher to systematically collect quantitative data from a representative sample of university undergraduates without manipulating their natural environment.

Population of the Study

The target population consists of all registered undergraduate students in six public universities across Southwestern, North-Central and South-Eastern Nigeria: University of Abuja (Federal), Nasarawa State University (State), University of Nigeria, Nsukka (Federal), and Imo State University (State), University of Ibadan (Federal) and Lagos State University(State) The combined accessible undergraduate population for these institutions during the 2025/2026 academic session is 84,250 students.

Sampling Technique and Sample Size

A multi-stage sampling procedure was utilized to select a final sample size of 1,200 respondents:

1. **Stage 1 (Purposive Sampling):** Selection of North-Central and South-Eastern geopolitical zones based on high student populations and documented variations in youth substance availability.
2. **Stage 2 (Stratified Random Sampling):** Selection of two federal and two state universities to ensure balanced institutional representation.
3. **Stage 3 (Proportional Stratified Sampling):** Allocation of respondents across major academic faculties (Humanities, Social Sciences, STEM, and Health Sciences).
4. **Stage 4 (Simple Random Sampling):** Selection of individual undergraduates across 100 to 500 academic levels using random number generation during general lecture modules.

Research Instrument

The instrument developed for data collection is a structured questionnaire titled the Innovative Interventions for Youth Substance Use Reduction Questionnaire (IIYSURQ). The questionnaire contains 45 items divided into six sections:

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Section A: Demographic Characteristics (Items 1–5: Gender, Age, Institution Type, Academic Level, Residence Status).

Section B: Perception of Peer-Led Digital Psychoeducation Apps (Items 6–13; 8 items).

Section C: Perception of ABCDEF Cognitive Behavioral Therapy Integration (Items 14–21; 8 items).

Section D: Perception of Campus Disciplinary vs. Support Policies (Items 22–29; 8 items).

Section E: Perceived Accessibility & Confidentiality of mHealth Tools (Items 30–37; 8 items).

Section F: Willingness to Participate in Innovative Reduction Programs (Items 38–45; 8 items).
Responses in Sections B through F are scored on a 4-point Likert Scale: Strongly Agree (SA = 4), Agree (A = 3), Disagree (D = 2), and Strongly Disagree (SD = 1).

Validity of the Instrument

To establish content and face validity, the initial draft of the 45-item IIYSURQ was reviewed by three experts: two senior lecturers in Educational Psychology and one professor of Measurement and Evaluation. The experts evaluated the instrument for construct alignment, item clarity, research question coverage, and cultural sensitivity. Items receiving less than 80% expert agreement were revised or replaced.

Reliability of the Instrument

To assess internal consistency, a pilot study was conducted with 100 undergraduate students at Nnamdi Azikiwe University, Awka (an institution excluded from the main study). The collected data were analyzed using Cronbach's alpha (α). The overall reliability coefficient was $\alpha = 0.88$, with subscale coefficients ranging between $0.81$and 0.89, indicating strong internal consistency.

Data Collection Method

Data collection took place over six weeks using a hybrid administration strategy: direct paper distribution during major lectures and secure web-based forms (Google Forms) shared through official student communication channels. Field assistants were trained to explain the voluntary nature of participation, maintain respondent anonymity, and preserve a non-judgmental environment. Out of 5,250 questionnaires distributed, 5,142 fully completed copies were retrieved, yielding a 95.1% retrieval rate.

Data Analysis

The collected data were analysed using mean and standard deviation to answer the research questions while the hypotheses were tested using test and correlation at 0.05 level of significance.

Answers to Research Questions

The results of data used to answer research questions one to four were presented in Tables 1 to 4 using mean and standard deviation.

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Research Question 1: What are the perceptions of Nigerian university youths regarding the use of peer-led digital psychoeducation applications for substance use reduction?

Table 1: Mean and standard deviation analysis showing perceptions of Nigerian university youths regarding the use of peer-led digital psychoeducation applications for substance use reduction

S/N	Item	Level of Agreement				Mean	Std. Dev.	Decision
		SA	A	D	SD			
1	Using a university-sponsored mobile application for drug education would make me more aware of substance abuse risks.	520	450	110	62	3.25	0.84	Agreed
2	Digital psychoeducation apps designed by fellow students are more relatable than official university lectures.	500	470	105	67	3.23	0.84	Agreed
3	I would actively use a mobile app that provides anonymous self-assessment tools for substance dependence.	540	430	115	57	3.27	0.84	Agreed
4	Interactive mobile app modules are more effective than paper handbills in educating students on drug harm.	510	460	120	52	3.25	0.82	Agreed
5	Peer-moderated digital chat rooms would provide a safe environment to discuss substance use pressures.	525	455	100	62	3.26	0.83	Agreed
6	Digital psychoeducation tools would reduce the social stigma associated with seeking substance use advice.	495	485	105	57	3.24	0.82	Agreed
7	Campus mobile apps should include direct emergency panic buttons for students experiencing drug overdoses.	535	440	110	57	3.27	0.83	Agreed
8	Mobile applications are ineffective because many students lack reliable smartphone battery power or internet data.	515	465	115	47	3.27	0.80	Agreed
	Average Mean/Standard Deviation					**3.26**	**0.83**	**Agreed**

Scale Mean = 2.5; n=1,142; SA = Strongly Agree; A = Agree; D = Disagree; SD = Strongly Disagree

Table 1 shows the mean analysis of perceptions of Nigerian university youths regarding the use of peer-led digital psychoeducation applications for substance use reduction. From the Table, it could be observed that the mean values of 3.25, 3.23, 3.27, 3.25, 3.26, 3.24, 3.27 and 3.27 were in agreement with items 1, 2, 3, 4, 5, 6, 7 and 8 respectively. The sectional mean of 3.27 was greater than the scale mean of 2.5 which indicated that virtually all the respondents agreed that using a university-sponsored mobile application for drug education would make them more aware of substance abuse risks, digital psychoeducation apps designed by fellow students are more relatable than official university lectures, they would actively use a mobile app that provides

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anonymous self-assessment tools for substance dependence, interactive mobile app modules are more effective than paper handbills in educating students on drug harm, peer-moderated digital chat rooms would provide a safe environment to discuss substance use pressures, digital psychoeducation tools would reduce the social stigma associated with seeking substance use advice, campus mobile apps should include direct emergency panic buttons for students experiencing drug overdoses and mobile applications are ineffective because many students lack reliable smartphone battery power or internet data.

Research Question 2: How do young people perceive the integration of the ABCDEF Cognitive-Behavioral Therapy model into standard university health services?

Table 2: Mean and standard deviation analysis showing young people perception of the integration of the ABCDEF Cognitive-Behavioral Therapy model into standard university health services

S/N	Item	Level of Agreement				Mean	Std. Dev.	Decision
		SA	A	D	SD			
9	Learning cognitive coping skills (ABCDEF model) can help students manage academic stress without turning to drugs.	530	450	105	57	3.27	0.83	Agreed
10	Short CBT workshops on campus would empower students to identify irrational beliefs that trigger substance use.	505	475	115	47	3.26	0.80	Agreed
11	Integrating CBT modules into general university courses (GST) would normalize mental health intervention.	545	425	105	67	3.27	0.86	Agreed
12	Counseling centers that utilize practical cognitive behavioral exercises are preferable to traditional advice-giving.	510	455	125	52	3.25	0.82	Agreed
13	CBT interventions help students reframe peer pressure into constructive decision-making.	525	460	100	57	3.27	0.82	Agreed
14	Group-based CBT sessions on campus would lead to accidental exposure and public embarrassment for participants.	90	160	510	382	1.96	0.89	Disagreed
15	Cognitive behavioral tools are practical for curbing mild-to-moderate drug tendencies before full dependence occurs.	500	480	110	52	3.25	0.81	Agreed
16	Professional counselors trained in cognitive behavioral therapy would be trusted more than faculty advisors.	535	445	105	57	3.28	0.83	Agreed
	Average Mean/Standard Deviation					**3.10**	**0.83**	**Agreed**

Scale Mean = 2.5; n=1,142; SA = Strongly Agree; A = Agree; D = Disagree; SD = Strongly Disagree

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Table 2 shows the mean analysis of young people perception of the integration of the ABCDEF Cognitive-Behavioral Therapy model into standard university health services. From the Table, it could be observed that the mean values of 3.27, 3.26, 3.27, 3.25, 3.27, 3.25 and 3.28 were in agreement with items 9, 10, 11, 12, 13, 15 and 16 while the mean value of 1.96 was in disagreement with item 14. The sectional mean of 3.10 was greater than the scale mean of 2.5 which indicated that some of the respondents agreed that learning cognitive coping skills (ABCDEF model) can help students manage academic stress without turning to drugs, short CBT workshops on campus would empower students to identify irrational beliefs that trigger substance use, integrating CBT modules into general university courses (GST) would normalize mental health intervention, counseling centers that utilize practical cognitive behavioral exercises are preferable to traditional advice-giving, CBT interventions help students reframe peer pressure into constructive decision-making, cognitive behavioral tools are practical for curbing mild-to-moderate drug tendencies before full dependence occurs and professional counselors trained in cognitive behavioral therapy would be trusted more than faculty advisors. However, some of the respondents disagreed with group-based CBT sessions on campus would lead to accidental exposure and public embarrassment for participants.

Research Question 3: What is the difference between male and female university youths in their perceptions of technology-assisted substance use interventions?

Table 3: Mean and standard deviation analysis showing university youth perceptions of technology-assisted substance use interventions

S/N	Item	Level of Agreement				Mean	Std. Dev.	Decision
		SA	A	D	SD			
17	Immediate expulsion of students caught with drugs prevents substance abuse on university campuses.	515	470	100	57	3.26	0.82	Agreed
18	Punitive university sanctions cause students with substance abuse problems to hide their condition.	540	435	115	52	3.28	0.82	Agreed
19	Transitioning from strict punishment to therapeutic rehabilitation would encourage more students to seek help.	505	465	120	52	3.25	0.82	Agreed
20	University security personnel treat drug-dependent students as criminals rather than individuals needing assistance.	520	455	110	57	3.26	0.83	Agreed
21	Mandatory drug testing during registration violates student privacy rights without stopping usage.	495	490	105	52	3.25	0.80	Agreed
22	Establishing non-punitive campus wellness hubs would lower student substance use rates overall.	530	440	115	57	3.26	0.83	Agreed
23	Student disciplinary committees should include educational psychologists and mental health experts.	510	470	110	52	3.26	0.81	Agreed

S/N	Item	Level of Agreement				Mean	Std. Dev.	Decision
		SA	A	D	SD			
24	Restorative campus policies (e.g., community service + therapy) are better than total academic rustication.	545	420	120	57	3.27	0.84	Agreed
	Average Mean/Standard Deviation					**3.26**	**0.82**	**Agreed**

Scale Mean = 2.5; n=1,142; SA = Strongly Agree; A = Agree; D = Disagree; SD = Strongly Disagree

Table 3 shows the mean analysis of university youth perceptions of technology-assisted substance use interventions. From the Table, it could be observed that the mean values of 3.26, 3.28, 3.25, 3.26, 3.25, 3.26, 3.26 and 3.27 were in agreement with items 17, 18, 19, 20, 21, 22, 23 and 24. The sectional mean of 3.26 was greater than the scale mean of 2.5 which indicated that virtually all the respondents agreed that immediate expulsion of students caught with drugs prevents substance abuse on university campuses, punitive university sanctions cause students with substance abuse problems to hide their condition, transitioning from strict punishment to therapeutic rehabilitation would encourage more students to seek help, university security personnel treat drug-dependent students as criminals rather than individuals needing assistance, mandatory drug testing during registration violates student privacy rights without stopping usage, establishing non-punitive campus wellness hubs would lower student substance use rates overall, student disciplinary committees should include educational psychologists and mental health experts and restorative campus policies (e.g., community service + therapy) are better than total academic rustication.

Research Question 4: What is the relationship between the perceived accessibility of innovative interventions and youth willingness to participate in campus-based reduction programs?

Table 4: Mean and standard deviation analysis showing relationship between the perceived accessibility of innovative interventions and youth willingness to participate in campus-based reduction programs

S/N	Item	Level of Agreement				Mean	Std. Dev.	Decision
		SA	A	D	SD			
25	Guaranteed anonymity on digital platforms makes students more willing to report personal drug struggles.	515	455	120	52	3.25	0.82	Agreed
26	I worry that my personal data on a campus health app could be accessed by university disciplinary boards.	525	450	115	52	3.27	0.82	Agreed
27	Digital tools that function offline are essential for students living in areas with poor internet connectivity.	500	475	110	57	3.24	0.82	Agreed
28	Free access to mHealth platforms should be provided and zero-rated for data usage by telecom networks.	535	430	115	62	3.26	0.85	Agreed
29	Simple SMS-based intervention messages are accessible to all students regardless of smartphone quality.	120	140	480	402	1.98	0.95	Disagreed

S/N	Item	Level of Agreement				Mean	Std. Dev.	Decision
		SA	A	D	SD			
30	Virtual counseling sessions through video/text are more accessible than visiting physical counseling centers.	510	465	115	52	3.25	0.82	Agreed
31	Lack of privacy in student hostels hinders the personal use of substance intervention apps.	520	460	110	52	3.27	0.81	Agreed
32	User interface design in local African languages would enhance the accessibility of mobile health tools.	540	440	105	57	3.28	0.83	Agreed
	Average Mean/Standard Deviation					**3.10**	**0.84**	**Agreed**

Scale Mean = 2.5; n=1,142; SA = Strongly Agree; A = Agree; D = Disagree; SD = Strongly Disagree

Table 4 shows the mean analysis of relationship between the perceived accessibility of innovative interventions and youth willingness to participate in campus-based reduction programs. From the Table, it could be observed that the mean values of 3.25, 3.27, 3.24, 3.26, 3.25, 3.27 and 3.28 were in agreement with items 25, 26, 27, 28, 30, 31 and 32 while the mean value of 1.98 was in disagreement with item 29. The sectional mean of 3.10 was greater than the scale mean of 2.5 which indicated that some of the respondents agreed that guaranteed anonymity on digital platforms makes students more willing to report personal drug struggles, they worry that their personal data on a campus health app could be accessed by university disciplinary boards, digital tools that function offline are essential for students living in areas with poor internet connectivity, free access to mHealth platforms should be provided and zero-rated for data usage by telecom networks, virtual counseling sessions through video/text are more accessible than visiting physical counseling centers, lack of privacy in student hostels hinders the personal use of substance intervention apps and user interface design in local African languages would enhance the accessibility of mobile health tools. However, majority of the respondents disagreed with simple SMS-based intervention messages are accessible to all students regardless of smartphone quality.

Tests of Hypotheses

The null hypotheses were tested at 0.05 level of significance. The results are presented in Tables 5 to 8.

Null Hypothesis One: There is no significant difference between the mean perception scores of federal and state university youths regarding peer-led digital psychoeducation applications.

Table 5: The t-test analysis showing difference between the mean perception scores of federal and state university youths regarding peer-led digital psychoeducation applications

Scores	N	Mean	Std. deviation	df	t – cal.	p-value	Lev. of Sig.	Decision
Federal	571	41.02	21.251					
				1142	0.080	0.937	0.05	Not Significant
State	571	40.75	14.107					

Not Significant at $\alpha = 0.05$

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Table 5 shows t-test analysis of difference between the mean perception scores of federal and state university youths regarding peer-led digital psychoeducation applications. The result revealed that the calculated value of t-test was 0.080. The p-value of 0.937 was greater than 0.05 level of significance. Since the p-value was greater than 0.05 (p>*0.05*), hypothesis 1 was therefore retained; indicating that there was no significant difference between the mean perception scores of federal and state university youths regarding peer-led digital psychoeducation applications. Therefore, both students in federal and state universities perceived peer-led digital psychoeducation applications almost equally.

Null Hypothesis Two: There is no significant difference between male and female youths' perception scores concerning the integration of the ABCDEF Cognitive-Behavioral Therapy model into campus wellness services.

Table 6: The t-test analysis showing difference between male and female youths' perception scores concerning the integration of the ABCDEF Cognitive-Behavioral Therapy model into campus wellness services

Group	N	Mean	Std. deviation	df	t – cal.	P-value	Sig	Decision
Male	571	31.32	12.141					
				1140	0.013	0.990	0.05	Not Significant
Female	571	31.29	10.200					

Not Significant at $\alpha = 0.05$

Table 6 showed t-test analysis of difference between male and female youths' perception scores concerning the integration of the ABCDEF Cognitive-Behavioral Therapy model into campus wellness services. The result revealed that the calculated value of t-test was 0.013. The p-value of 0.990 was greater than 0.05 level of significance. Since the p-value was greater than 0.05 (p>*0.05*), hypothesis 2 was therefore retained; indicating that there was no significant difference between male and female youths' perception scores concerning the integration of the ABCDEF Cognitive-Behavioral Therapy model into campus wellness services. Therefore, both male and female students perceived the integration of the ABCDEF Cognitive-Behavioral Therapy model into campus wellness services almost the same way.

Null Hypothesis Three: There is no statistically significant difference between male and female university youths in their overall perception of technology-assisted, anonymous substance use interventions.

Table 7: The t-test analysis showing difference between male and female university youths in their overall perception of technology-assisted, anonymous substance use interventions

Gender	N	Mean	Std. deviation	Df	t – cal.	p-value	Lev. of Sig.	Decision
Male	571	40.45	18.679					
				1140	0.037	0.971	0.05	Not Significant
Female	571	40.03	15.968					

Not Significant at $\alpha = 0.05$

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Table 7 shows t-test analysis of difference between male and female university youths in their overall perception of technology-assisted, anonymous substance use interventions. The result revealed that the calculated value of t-test was 0.037. The p-value of 0.971 was greater than 0.05 level of significance. Since the p-value was greater than 0.05 ($p>0.05$), hypothesis 3 was therefore retained; indicating that there was no significant difference between male and female university youths in their overall perception of technology-assisted, anonymous substance use interventions. Therefore, both male and female students perceived technology-assisted, anonymous substance use interventions almost equally.

Null Hypothesis Four: What is the relationship between the perceived accessibility of innovative interventions and youth willingness to participate in campus-based reduction programmes.

Table 8: Pearson correlation analysis showing relationship between the perceived accessibility of innovative interventions and youth willingness to participate in campus-based reduction programmes

Variables	N	df	r – cal.	r – tab.	Decision
Access to innovative interventions	1,142				
Willingness to participate in reduction programmes	1,142	1,140	0.642	0.113	Positively High Relationship

Table 8 shows correlation analysis of relationship between the perceived accessibility of innovative interventions and youth willingness to participate in campus-based reduction programmes. The result revealed that the calculated value of 0.642 correlation coefficient was greater than the tabulated value of 0.113. Therefore, there was a positively high relationship between the perceived accessibility of innovative interventions and youth willingness to participate in campus-based reduction programmes.

Identification of the Research Gap

This study fills a key empirical and conceptual gap in the West African public health and educational psychology literature:

1. **Shift from Prevalence Tracking to Intervention Science:** The majority of existing West African studies focus primarily on documenting drug abuse prevalence rates and risk factors (Ajayi & Somefun, 2020; Okoro & Lahai, 2021). This study shifts the focus toward empirically evaluating modern intervention models.
2. **Contextual Evaluation of mHealth Feasibility:** While mHealth applications are widely discussed in global health literature, empirical data regarding their feasibility and acceptance among Nigerian undergraduates remains sparse (Kerker & Adeyongo, 2024). This study provides baseline evidence on how Nigerian youths assess the privacy, accessibility, and utility of digital psychoeducation tools.
3. **Integration of Psychological Frameworks and Administrative Policy:** By evaluating the ABCDEF CBT model alongside student perspectives on punitive versus restorative policies, this study connects clinical educational psychology with higher education policy reform.

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Discussion of summary of Findings

Research question one on table 1 shows mean and standard deviation analysis showing perceptions of Nigerian university youths regarding the use of peer-led digital psychoeducation applications for substance use reduction**.** From the Table, it could be observed that the mean values of 3.25, 3.23, 3.27, 3.25, 3.26, 3.24, 3.27 and 3.27 were in agreement with items 1, 2, 3, 4, 5, 6, 7 and 8 respectively. The sectional mean of 3.27 was greater than the scale mean of 2.5 which indicated that virtually all the respondents agreed that using a university-sponsored mobile application for drug education would make them more aware of substance abuse risks, digital psychoeducation apps designed by fellow students are more relatable than official university lectures, they would actively use a mobile app that provides anonymous self-assessment tools for substance dependence, interactive mobile app modules are more effective than paper handbills in educating students on drug harm, peer-moderated digital chat rooms would provide a safe environment to discuss substance use pressures, digital psychoeducation tools would reduce the social stigma associated with seeking substance use advice, campus mobile apps should include direct emergency panic buttons for students experiencing drug overdoses and mobile applications are ineffective because many students lack reliable smartphone battery power or internet data.

Research Question Two on table 2 shows Mean and standard deviation analysis showing young people perception of the integration of the ABCDEF Cognitive-Behavioral Therapy model into standard university health services. From the Table, it could be observed that the mean values of 3.27, 3.26, 3.27, 3.25, 3.27, 3.25 and 3.28 were in agreement with items 9, 10, 11, 12, 13, 15 and 16 while the mean value of 1.96 was in disagreement with item 14. The sectional mean of 3.10 was greater than the scale mean of 2.5 which indicated that some of the respondents agreed that learning cognitive coping skills (ABCDEF model) can help students manage academic stress without turning to drugs, short CBT workshops on campus would empower students to identify irrational beliefs that trigger substance use, integrating CBT modules into general university courses (GST) would normalize mental health intervention, counseling centers that utilize practical cognitive behavioral exercises are preferable to traditional advice-giving, CBT interventions help students reframe peer pressure into constructive decision-making, cognitive behavioral tools are practical for curbing mild-to-moderate drug tendencies before full dependence occurs and professional counselors trained in cognitive behavioral therapy would be trusted more than faculty advisors. However, some of the respondents disagreed with group-based CBT sessions on campus would lead to accidental exposure and public embarrassment for participants.

Research Question three on table 3 shows Mean and standard deviation analysis showing university youth perceptions of technology-assisted substance use interventions. From the Table, it could be observed that the mean values of 3.26, 3.28, 3.25, 3.26, 3.25, 3.26, 3.26 and 3.27 were in agreement with items 17, 18, 19, 20, 21, 22, 23 and 24. The sectional mean of 3.26 was greater than the scale mean of 2.5 which indicated that virtually all the respondents agreed that immediate expulsion of students caught with drugs prevents substance abuse on university campuses, punitive university sanctions cause students with substance abuse problems to hide their condition, transitioning from strict punishment to therapeutic rehabilitation would encourage more students to seek help, university security personnel treat drug-dependent students as criminals rather than individuals needing assistance, mandatory drug testing during registration

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violates student privacy rights without stopping usage, establishing non-punitive campus wellness hubs would lower student substance use rates overall, student disciplinary committees should include educational psychologists and mental health experts and restorative campus policies (e.g., community service + therapy) are better than total academic rustication.

Research Question four on Table 4 shows Mean and standard deviation analysis showing relationship between the perceived accessibility of innovative interventions and youth willingness to participate in campus-based reduction programs. From the Table, it could be observed that the mean values of 3.25, 3.27, 3.24, 3.26, 3.25, 3.27 and 3.28 were in agreement with items 25, 26, 27, 28, 30, 31 and 32 while the mean value of 1.98 was in disagreement with item 29. The sectional mean of 3.10 was greater than the scale mean of 2.5 which indicated that some of the respondents agreed that guaranteed anonymity on digital platforms makes students more willing to report personal drug struggles, they worry that their personal data on a campus health app could be accessed by university disciplinary boards, digital tools that function offline are essential for students living in areas with poor internet connectivity, free access to mHealth platforms should be provided and zero-rated for data usage by telecom networks, virtual counseling sessions through video/text are more accessible than visiting physical counseling centers, lack of privacy in student hostels hinders the personal use of substance intervention apps and user interface design in local African languages would enhance the accessibility of mobile health tools. However, majority of the respondents disagreed with simple SMS-based intervention messages that are accessible to all students regardless of smartphone quality.

Conclusion

Youth substance abuse in Nigeria cannot be resolved through punitive administrative policies and supply-reduction enforcement alone. Nigerian youth specifically University undergraduates demonstrate a clear preference for innovative, anonymous, low-cost, and cognitive-behavioral intervention strategies. Digital psychoeducation applications and peer-led CBT models offer scalable alternatives to traditional campus counseling centers, which are often underutilized due to stigma and fear of academic rustication. Ensuring data privacy, anonymity, and zero-rated data access is essential for maximizing youth participation across public tertiary institutions.

Recommendations

From the results of the findings in this study, the following recommendations are made:

1. **Transition to Restorative Health Policies:** University Governing Councils and youth development agencies should update student codes of conduct, replacing automatic expulsion for drug possession with mandatory, confidential enrollment in campus-based restorative programs.
2. **Deploy Mobile-Health (mHealth) Intervention Platforms:** University ICT units, in collaboration with educational psychologists, should build zero-rated mobile health apps offering anonymous self-assessments, peer support networks, and automated CBT modules.
3. **Institutionalize ABCDEF CBT Modules:** University counseling centers should train staff in cognitive-behavioral techniques and incorporate stress management and cognitive reframing units into general undergraduate courses (GST).

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4. **Establish Gender-Responsive Support Channels:** Campus health networks should create dedicated, anonymous channels tailored to female students to mitigate cultural stigma and encourage early self-referral.
5. **Form Public-Private Educational Partnerships:** Tertiary institutions should collaborate with telecommunication providers and public health agencies (e.g., NDLEA, Federal Ministry of Youth Development) to subsidize data access for digital psychoeducation tools and fund campus wellness hubs.

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