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Patterns and Predictors of Psychoactive Substance Abuse Avoidance Self-Efficacy: Insights from Drug Rehabilitation Centers in Southeast Nigeria

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Abstract

Substance use expectancies influence individuals' confidence in resisting drug use, yet the relationship between these expectancies and self-efficacy in clinical populations undergoing treatment for substance use disorder (SUD) remains poorly understood. This study aimed to document patterns of psychoactive substance use and examine how positive and negative substance use expectancies predict drug use avoidance self-efficacy among individuals receiving treatment for SUD in rehabilitation centres. Participants (N = 216, 80.1% males; age range 17–44 years, mean age = 27.95, SD = 6.12) were recruited from three National Drug Law Enforcement Agency (NDLEA) drug treatment and rehabilitation centers in Southeastern Nigeria. Data were collected using the Psychoactive Substance Use Questionnaire (PSUQ), Drug Avoidance Self-Efficacy Scale (DASES), and Substance Use Expectancy Questionnaire (SUEQ). Results revealed that cannabis (89.4%), alcohol (84.7%), shisha (66.7%), coffee (63.9%), codeine (56.0%), and sedatives (56.9%) were the most frequently used substances in the past year. Pearson's correlation analysis showed that positive expectancies were negatively correlated with drug avoidance self-efficacy (r = −.43, P <.001), while negative expectancies showed no significant correlation with self-efficacy (r = −.06, P >.05). Hierarchical multiple regression analysis demonstrated that while negative expectancies were not significant predictors of drug use avoidance self-efficacy (β = .06, P =.423), participants reporting higher positive expectancies exhibited significantly reduced self-efficacy (β = −.46, P <.001). This model accounted for 20.0% of the variance in drug use avoidance self-efficacy. The findings suggest that positive substance use expectancies play a critical role in diminishing perceived ability to avoid drug use during rehabilitation.

Keywords: Rehabilitation, secondary prevention, self-efficacy, substance use disorder, treatment outcome

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Introduction

Substance use disorder (SUD) represents a chronic and relapsing condition characterized by compulsive drug-seeking behaviour despite adverse consequences (American Psychiatric Association, 2013). Globally, SUD continues to pose significant public health challenges, affecting millions of individuals and their communities. The World Health Organization estimates that approximately 35 million people suffer from drug use disorders worldwide, with substantial economic and social burdens (Substance Abuse and Mental Health Services Administration, 2024). In Nigeria, substance use has emerged as a growing concern, particularly among young adults, with the United Nations Office on Drugs and Crime (UNODC) reporting approximately 14.3 million drug users in Nigeria, including an estimated 11 million cannabis users (Ajibola *et al*., 2023). Recent evidence indicates that polysubstance use patterns are common, with cannabis and alcohol being the most frequently used substances in sub-Saharan Africa (Asante and Atorkey, 2023; Belete *et al*., 2024). Understanding patterns of substance use among clinical populations is essential for developing targeted interventions and allocating treatment resources effectively. Additionally, identifying the psychological factors that influence recovery outcomes and relapse prevention remains critical for optimizing treatment efficacy.

Self-efficacy, a central construct in Bandura's (1977) social cognitive theory, refers to an individual's belief in their capacity to execute behaviours necessary to produce specific performance attainments. According to this theoretical framework, self-efficacy influences behaviour through four major processes: cognitive, motivational, affective, and selection processes. In the context of substance use recovery, self-efficacy determines whether individuals initiate attempts to abstain from drug use, how much effort they expend in maintaining abstinence, and how long they persist when confronted with obstacles and adverse experiences. Bandura's theory posits that self-efficacy beliefs are developed through four principal sources: mastery experiences, vicarious experiences, verbal persuasion, and physiological and emotional states.

Research has consistently demonstrated that self-efficacy is a strong predictor of treatment outcomes across diverse behavioural functioning domains (Bandura and Locke, 2003). Recent meta-analyses have confirmed that individuals with higher self-efficacy demonstrate greater ability to resist temptation, cope with cravings, and maintain long-term recovery (Stull *et al*., 2023). Empirical evidence has shown that self-efficacy mediates the effectiveness of cognitive-behavioural therapy on substance use outcomes, with improvements in self-efficacy being associated with reduced problem drinking and drug use (Maisto *et al*., 2024). Conversely, low self-efficacy has been associated with increased relapse rates and poorer treatment adherence (Al-Ziadat, 2024). Understanding factors that influence self-efficacy in clinical populations undergoing treatment is therefore essential for optimizing therapeutic interventions.

Substance use expectancies, which refer to individuals' beliefs about the anticipated effects of drug consumption (Leigh and Stacy, 1993), represent another crucial psychological construct in addiction research. These expectancies are typically classified into positive expectancies, which encompass anticipated pleasant or rewarding effects such as social facilitation, mood enhancement, and tension reduction, and negative expectancies, which include anticipated adverse consequences such as health problems, impaired cognitive functioning, and social difficulties (Goldman *et al*., 1991). According to expectancy theory, these cognitive representations of substance effects are learned through direct and vicarious experiences and subsequently influence both the initiation and maintenance of substance use behaviours (Brown *et al*., 1980).

Research in treatment populations has found that positive substance use expectancies are inversely related to refusal self-efficacy, suggesting that beliefs about rewarding effects may undermine confidence in one's ability to resist use (Connor *et al*., 2014). However, the relationship between positive and negative expectancies and self-efficacy in clinical treatment settings remains inadequately explored, particularly in sub-Saharan African contexts where cultural and contextual factors may differ substantially from Western populations where most expectancy research has been conducted.

Despite growing interest in the psychological mechanisms underlying SUD recovery, limited research has examined the patterns of psychoactive substance use and how substance use expectancies relate to self-efficacy among patients actively engaged in rehabilitation programs in Nigeria. Most existing studies have been conducted in Western populations, leaving significant gaps in understanding how these relationships manifest in non-Western contexts with different substance use profiles and treatment systems. The Nigerian context is particularly important given the high prevalence of SUDs and the growing problem of prescription opioid misuse involving substances such as codeine and tramadol (Ajibola *et al*., 2023; Boun *et al*., 2024).

Understanding the specific patterns of psychoactive substance use among clinical populations is essential for several reasons. First, comprehensive documentation of substance use profiles provides critical epidemiological data that can inform treatment planning, resource allocation, and policy development at the facility and national levels. Second, knowledge of which substances are most prevalent enables treatment centres to develop targeted intervention protocols and ensure adequate staff training for managing specific substance-related complications. Third, identifying polysubstance use patterns is crucial because individuals

using multiple substances often present with more complex clinical pictures, greater treatment resistance, and higher relapse rates compared to single-substance users. Fourth, substance use patterns in clinical populations may differ substantially from community samples, making it imperative to document the specific profiles of individuals actively seeking treatment. Finally, given the rapidly evolving drug landscape in Nigeria, with emerging substances and shifting patterns of availability, regular documentation of substance use in treatment settings provides vital surveillance data for tracking trends and identifying new threats to public health. Hence, this study aimed to: (1) document the patterns of psychoactive substance use among patients in drug rehabilitation centres in Southeast Nigeria, and (2) evaluate the predictive roles of positive substance use expectancies and negative substance use expectancies in drug use avoidance self-efficacy among these individuals, while controlling for age as a covariate.

Materials and Methods

Study Design and Participants

This cross-sectional study was conducted between November 2024 and May 2025. Participants were recruited from three National Drug Law Enforcement Agency (NDLEA) drug treatment and rehabilitation centres located in Southeastern Nigeria, specifically in Enugu, Anambra, and Imo States. The centres were purposively selected based on their status as government-accredited facilities with active treatment programs and adequate patient volumes. The three NDLEA rehabilitation centers selected for this study represent the primary government-operated treatment facilities in Southeastern Nigeria. These centers provide residential treatment programs combining medical detoxification, individual and group psychotherapy, psychoeducation, vocational training, and family counseling. Each facility is staffed by multidisciplinary teams including clinical psychologists, psychiatrists, nurses, social workers, and peer counselors. The centers typically accommodate between 30-80 patients at various stages of treatment, with program durations ranging from 3 to 12 months depending on individual needs and severity of substance use. These facilities were selected due to their status as accredited government centers with established treatment protocols, diverse patient populations, and willingness to support research activities.

Inclusion criteria

Inclusion criteria required participants to have a documented diagnosis of SUD, be currently enrolled in treatment programs at the participating centres, ability to understand English, and be capable of providing informed consent. Participants with severe cognitive impairment or acute psychotic symptoms that would prevent completion of questionnaires were excluded from the study.

Ethical Considerations

The study protocol was approved by the Psychology Research Ethics Committee of the University of Nigeria, Nsukka. A letter of identification was obtained from the Department of Psychology, University of Nigeria, Nsukka, and presented to the management of the different treatment centres for their permission to conduct the study. The Commander of the National Drug Law Enforcement Agency, Anambra State command, assisted in contacting the management of NDLEA in the other two states to facilitate the approval process. All participants provided written informed consent prior to participation. Participants were informed of their right to withdraw from the study at any time without consequences to their treatment. The nature of the study was clearly explained, and participants were assured that their privacy would be safeguarded as they were not required to provide identifying information. Confidentiality was maintained throughout the study, with all data de-identified and stored securely.

Study Instruments

Psychoactive Substance Use Questionnaire (PSUQ)

The PSUQ, developed by Eze (2006), was used to measure the frequency of psychoactive substance use on a 5-point response format ranging from 0 (never used before) to 4 (used it frequently in the past but has stopped). The instrument includes 15 items covering various substances including alcohol, tobacco, heroin, cannabis, cigarette, kolanut, amphetamine, coffee, codeine, sedatives, tramadol, methamphetamine, hallucinogens, and shisha. Respondents were also asked to list and rate other substances they use which were not listed in the instrument. Eze (2006) reported content validity and test-retest reliability index of $r = .61$ for the PSUQ, while previous studies in Nigeria reported acceptable Cronbach's alpha coefficients of .71 (Chukwuorji *et al*., 2020) and .74 (Eze *et al*., 2020). For the present study, an α of .72 was obtained.

Drug Avoidance Self-Efficacy Scale (DASES)

The DASES, developed by Martin et al. (1995), was used to assess participants' confidence in resisting drug use across various high-risk scenarios. The DASES presents respondents with 16 different situations where drug use might be tempting, asking them to rate their confidence in avoiding drug use on a 7-point Likert scale ranging from 1 (Certainly no) to 7 (Certainly yes). Half of the items (8) were reverse scored, while the other half were directly scored. Individual scores are computed by averaging responses to all 16 items, resulting in a composite measure of drug avoidance self-efficacy. Higher average scores indicate greater confidence in resisting drug use across various situations. Sample items include: "Imagine that you are going to a party where you will meet new people. You feel that drug/alcohol use will relax you and make you more

confident. Could you avoid drug/alcohol use?"; "Imagine that a new job is starting tomorrow, you are going out with friends and expecting a good time. Could you resist the urge to celebrate with drugs/alcohol?"; and "Imagine that you have just blown a good job, you are home alone and depressed. Would you give in to the urge to take drugs/alcohol which are in the house?" Martin *et al*. (1995) reported high internal consistency reliability with α of .91, while Norozi *et al*. (2016) reported α of .81. An internal consistency reliability (α) of .73 was obtained in the current sample.

Substance Use Expectancy Questionnaire (SUEQ)

The SUEQ was originally developed by Leigh and Stacy (1993) as a measure of alcohol use expectancy. The scale consists of 34 items with a 6-point Likert scale format (1 = never to 6 = always) measuring positive and negative expectancies about substance consumption. The items are grouped into two dimensions: positive expectancies (19 items) with subdimensions (positive social, fun, sex, and tension reduction) and negative expectancies (15 items) with subdimensions (negative social, negative emotional, negative physical, and negative cognitive). The original questionnaire presented adequate reliability coefficients of α = .94 for positive expectancies and α = .88 for negative expectancies (Leigh and Stacy, 1993). The 34 items were modified in a recent study in Nigeria by Ugwu *et al*. (2025) to reflect general substance use instead of alcohol use specifically (See Appenidx A). The modification involved replacing the word "alcohol" with "drugs" in the instructions and item stems. Sample items of the positive expectancies factor include: "When I take drugs, I am more socially accepted"; "When I take drugs, I enjoy feeling lively"; "When I take drugs, it eliminates my negative feelings and moods." Sample items for the negative expectancies factor include: "When I take drugs, I get aggressive"; "When I take drugs, I feel ashamed of myself"; "When I take drugs, I experience unpleasant physical effects." Exploratory factor analysis by Ugwu *et al*. (2025) extracted the two original dimensions using Principal Axis Factoring, with the first factor (positive expectancy) accounting for 29.43% of the variance and the second (negative expectancy) for 25.18% after Varimax rotation. Confirmatory factor analysis supported the hypothesized two-factor model for the 34 observed variables, with nearly all factor loadings being statistically significant and the overall fit being acceptable (RMSEA = 0.06, CFI = 0.96, TLI = 0.94). Ugwu *et al*. (2025) reported Cronbach's α coefficients of .94 (positive expectancies), .90 (negative expectancies), and .92 (overall expectancies). The α in the current study were as follows: .80 (positive expectancies), 73 (negative expectancies), and.87 (overall scale).

Demographic Questionnaire

A demographic data questionnaire was used to obtain information about participants' age, gender, marital status, religion, and ethnic group.

Data Collection Procedure

Data collection was conducted by the researchers with assistance from trained personnel at the treatment centres. At the time of data collection, the three centers had a combined active patient population of approximately 280 individuals. A total of 240 questionnaires were distributed, representing approximately 86% of the available population. This sample size was deemed adequate for detecting medium effect sizes ($f^2 = 0.15$) in hierarchical regression analysis with 80% power at α = .05, based on G*Power calculations (Faul *et al*., 2009). Participants were approached during their regular visits to the treatment centres or during group therapy sessions. After obtaining informed consent, participants were given the questionnaire booklet and a pencil to complete the survey. The questionnaires were administered in English, which is the official language of education in Nigeria and widely understood by the target population. For participants with limited literacy, research assistants provided assistance by reading items aloud and recording responses. The entire assessment session lasted approximately 30 to 45 minutes. All 240 questionnaires were returned to the researchers, but 24 were excluded due to incomplete or improper filling, resulting in 216 usable questionnaires (90% response rate). Completed questionnaires were checked for completeness, coded, and stored securely for data analysis.

Data Analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 26.0. Descriptive statistics including frequencies and percentages were calculated to characterize patterns of psychoactive substance use. Pearson correlation analysis was conducted to examine the bivariate relationships between study variables. Correlation coefficients were interpreted according to established guidelines, with values of 0.10-0.29 considered weak, 0.30-0.49 considered moderate, and 0.50 or higher considered strong associations (Cohen, 1988). Hierarchical multiple regression analysis was performed to examine the predictive relationships between substance use expectancies and drug use avoidance self-efficacy while controlling for age. Age was selected as a covariate based on previous research suggesting that age may influence both self-efficacy beliefs and substance use expectancies through accumulated life experiences and cognitive development (Pinquart and Borgolte, 2022). Gender was examined in preliminary correlation analyses but was not included as a covariate in the hierarchical regression model as it showed no significant association with the primary outcome variable, drug use avoidance self-efficacy ($r = .08$, $P > .05$). In the hierarchical regression model, age was entered in the first step as a covariate, followed by negative expectancies in the second step, and positive expectancies in the third

step. This approach allowed examination of the unique contribution of each predictor while controlling for previously entered variables. Statistical significance was set at $P < 0.05$. Effect sizes were reported using standardized regression coefficients (β), R^2 values, and R^2 change statistics.

Result

Table 1 presents the sociodemographic characteristics of the study participants. A total of 216 participants undergoing treatment for substance use disorder were enrolled in the study. The sample consisted of 173 males (80.1%) and 43 females (19.9%). The age range of participants was 17 to 44 years, with a mean age of 27.95 years (SD = 6.12). Regarding marital status, 176 participants (81.5%) were single, 37 (17.1%) were married, and 3 (1.4%) were divorced. Based on religious affiliation, the majority were Christians (n = 165, 76.4%), followed by traditional worshipers (n = 26, 12.0%), and adherents of other religions (n = 25, 11.6%). Regarding ethnic group, Igbo participants were the most represented (n = 175, 81.0%), followed by other ethnic groups (n = 22, 10.2%), Yorubas (n = 15, 6.9%), and Hausas (n = 4, 1.9%).

Results in Table 3 showed that age was weakly and negatively correlated with gender (r = -.16, P < .05), moderately and positively correlated with negative expectancies (r = .34, P < .001), and weakly and positively correlated with overall substance use expectancies (r = .23, P < .01). Gender was weakly and negatively associated with positive expectancies (r = -.26, P < .01) and overall substance use expectancies (r = -.21, P < .001), but showed no significant correlation with negative expectancies (r = -.06, P > .05). Positive expectancies demonstrated a moderate positive correlation with negative expectancies (r = .34, P < .001), a strong positive correlation with overall substance use expectancies (r = .87, P < .001), a moderate negative correlation with drug use avoidance self-efficacy (r = -.43, P < .001), and a moderate positive correlation with substance use (r = .42, P < .001). Negative expectancies showed a strong positive correlation with overall substance use expectancies (r = .77, P < .001), but demonstrated no significant correlations with drug use avoidance self-efficacy (r = -.06, P > .05) or substance use (r = .12, P > .05). Overall substance use expectancies was moderately and negatively correlated with drug use avoidance self-efficacy (r = -.33, P < .001) and moderately and positively correlated with substance use (r = .35, P < .001). Finally, drug use avoidance self-efficacy was moderately and negatively correlated with substance use (r = -.32, P < .001).

Results of the hierarchical multiple regression for the test of the hypotheses is shown in Table 4. In Step 1, age was not a significant predictor of drug use avoidance self-efficacy among participants. The model was not significant, $F\Delta$ (1, 214) = 2.60, R^2 = .012.

In step 2, negative expectations was not a significant predictor of drug use avoidance self-efficacy among participants. However, positive expectations was a significant negative predictor of drug use avoidance self-efficacy among participants. The *B* showed that for each one unit rise in positive expectations, drug use avoidance self-efficacy among participants decreases by -.61 units. The model was significant, $F\Delta$ (2, 212) = 26.21, $R^2\Delta$ = .20. The $R^2\Delta$ of .20 indicated that 20.0% of variance in drug use avoidance self-efficacy among participants was explained by negative expectations and positive expectations. All the variables in the study explained 20.8% of the variance in drug use avoidance self-efficacy among participants.

Table 1: Sociodemographic Characteristics of Participants (N = 216*)*

Characteristic	Category	n	%
Gender	Male	173	80.1
	Female	43	19.9
Age	Range: 17-44 years		
	Mean (SD)	27.95 (6.12)	
Marital Status	Single	176	81.5
	Married	37	17.1
	Divorced	3	1.4
Religious Affiliation	Christianity	165	76.4
	Traditional worship	26	12.0
	Other religions	25	11.6
Ethnic Group	Igbo	175	81.0
	Other ethnic groups	22	10.2
	Yoruba	15	6.9
	Hausa	4	1.9

Table 2: Binary Categorization of Psychoactive Substance Use in the Past Year

Substance	No (%)	Yes (%)
Alcohol	15.3	84.7
Cannabis	10.6	89.4
Tobacco	46.3	53.7
Cocaine	68.1	31.9
Heroin	77.8	22.2
Amphetamine	72.7	27.3
Coffee (e.g., Nescafe or others with caffeine)	36.1	63.9
Kolanut	42.6	57.4
Codeine (e.g., some cough syrups)	44.0	56.0
Sedatives (e.g., sleeping pills, Valium, flunitrazepam, Refinol/Rohypnol, etc.)	43.1	56.9
Tramadol	54.2	45.8
Methamphetamine	63.9	36.1
Hallucinogens (LSD, PCP, mescaline, peyote)	65.7	34.3
Shisha	33.3	66.7
Other substances	39.8	60.2

Table 3: Pearson correlations of age, gender, substance use expectancies, drug use avoidance self-efficacy and substance use.

Variable	1	2	3	4	5	6	
1	Age	-					
2	Gender	-.16*	-				
3	Positive expectancies	.08	-.26**	-			
4	Negative expectancies	.34***	-.06	.34***	-		
5	Substance use expectancies	.23**	-.21***	.87***	.77***	-	
6	DU Avoidance Self-efficacy	.11	.08	-.43***	-.06	-.33***	-
7	Substance use	.08	-.13	.42***	.12	.35***	-.32***

Note: *** P <.001; ** P <.01; * P < .05; Gender was coded 1= male, 2 = female; DU = Drug Use; SU = Substance use

Table 4: Hierarchical multiple regression predicting drug use avoidance self-efficacy among participants by age, negative expectations, and positive expectations

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Predictors	Step 1			Step 2		
	B	β	*t*	*B*	β	*t*
Age	.33	.11	1.61	.38	.13	1.93
Negative Expectancies				.09	.06	.80
Positive Expectancies				-.61	-.46	-7.05***
R^2		.012			.21	
$R^2\Delta$		.012			.20	
F		2.60 (1, 214)			18.55 (3, 212) ***	
*F*Δ		2.60 (1, 214)			26.21 (2, 212) ***	

Note. ***P < .001

Discussion

This study documented patterns of psychoactive substance use and evaluated the predictive roles of positive and negative substance use expectancies on drug use avoidance self-efficacy among individuals undergoing treatment for SUD in rehabilitation centres in Southeast Nigeria. The findings provide important insights into the substance use profiles and psychological factors influencing recovery confidence in this clinical population.

Patterns of Psychoactive Substance Use

The first objective of this study was to document patterns of psychoactive substance use among patients in drug rehabilitation centers. The results revealed that cannabis was overwhelmingly the most commonly used substance, with nearly 90% of participants reporting use in the past year. This finding aligns with recent systematic reviews indicating that cannabis is among the most prevalent substances used among young people in sub-Saharan Africa, with substantial lifetime prevalence rates across the region (Ebrahim *et al*., 2024; Asante and Atorkey, 2023). The high prevalence of cannabis use in this clinical sample is consistent with reports from the UNODC indicating that Nigeria has approximately 11 million cannabis users, representing one of the highest rates in Africa (Ajibola *et al.*, 2023). Cannabis use has been associated with various adverse health outcomes including cognitive impairment, psychotic symptoms, and increased risk for other substance use disorders, making it a significant public health concern in the Nigerian context.

Alcohol emerged as the second most commonly used substance, reported by approximately 85% of participants. This finding is consistent with recent meta-analytic evidence demonstrating high prevalence rates of alcohol use and alcohol use disorders in sub-Saharan Africa (Belete *et al.*, 2024). The co-occurrence of cannabis and alcohol use observed in this study reflects common polysubstance use patterns documented in the literature, wherein individuals frequently combine multiple substances to enhance desired effects or mitigate adverse effects of specific drugs. The substantial prevalence of shisha use (67%) and coffee use (64%) suggests that participants in this study engaged with a diverse array of psychoactive substances, including both legal and socially acceptable substances alongside illicit drugs. This pattern underscores the complexity of substance use presentations in clinical populations and highlights the need for comprehensive assessment and treatment approaches that address multiple substances rather than focusing narrowly on single substances. Of particular concern is the high prevalence of codeine (56%) and sedative (57%) use observed in this clinical sample. These findings reflect the growing problem of prescription opioid misuse in Nigeria, which has been extensively documented in recent epidemiological research. Boun *et al*. (2024) reported that Africa accounts for approximately half of global pharmaceutical opioid seizures, with these substances being primarily consumed within the region rather than being trafficked internationally. Codeine-containing cough syrups and tramadol have become increasingly popular among young adults in Nigeria, often marketed and distributed through informal channels despite regulatory efforts to control their availability. The misuse of these prescription medications poses serious health risks including respiratory depression, dependence, and overdose mortality. The presence of substantial codeine and sedative use in this rehabilitation sample suggests that treatment programs must be equipped to address opioid-related problems alongside traditional concerns about cannabis and alcohol use.

The relatively lower prevalence of heroin (22%), cocaine (32%), and amphetamine (27%) use observed in this study contrasts with patterns documented in Western countries where these substances are often more prominent in

treatment populations. This difference may reflect regional variations in drug availability, cost, cultural attitudes toward specific substances, and law enforcement priorities. Nevertheless, the presence of these substances among a subset of participants indicates that rehabilitation centres in Nigeria must maintain capacity to address diverse substance use presentations. The finding that approximately 60% of participants reported using "other substances" not specifically listed in the questionnaire further emphasizes the dynamic and evolving nature of the substance use landscape, wherein novel psychoactive substances and locally available drugs may play important roles.

Predictive Role of Substance Use Expectancies

The second objective of this study was to examine how positive and negative substance use expectancies predict drug use avoidance self-efficacy. Positive substance use expectancies emerged as the only significant predictor of self-efficacy, accounting for a substantial 20% of the variance in this outcome. Specifically, participants who held stronger beliefs about the positive or rewarding effects of drug use demonstrated significantly lower confidence in their ability to avoid substance use. This finding provides strong empirical support for theoretical frameworks emphasizing the role of cognitive factors in maintaining substance use behaviours and undermining recovery confidence.

According to Bandura's (1977) social cognitive theory, self-efficacy is influenced by cognitive appraisals of one's capabilities and the expected outcomes of behaviour. When individuals hold strong positive expectancies about substance use, anticipating that drugs will produce pleasurable effects such as mood enhancement, social facilitation, and tension reduction, these beliefs compete with and potentially overwhelm their confidence in abstaining from use. The expectancy that drug use will yield immediate positive outcomes creates a cognitive conflict wherein the anticipated rewards of use outweigh the perceived value of abstinence, thereby diminishing self-efficacy for avoiding drugs. This process is consistent with Goldman et al.'s (1991) expectancy theory, which posits that memory networks containing positive associations with substance effects become activated in high-risk situations, triggering cravings and undermining resistance efforts.

The strong negative association between positive expectancies and self-efficacy observed in this study is consistent with previous research demonstrating inverse relationships between drug effect expectancies and self-efficacy at treatment entry (Brown *et al*., 1995). Extant literature has similarly found that larger decreases in expectancies over the course of treatment are associated with improved self-efficacy outcomes (Gwaltney *et al*., 2005). The present findings extend this literature by demonstrating that these relationships hold in a non-Western clinical population with diverse polysubstance use patterns. The magnitude of the relationship observed suggests that positive expectancies represent a potent cognitive barrier to developing and maintaining strong self-efficacy during rehabilitation.

Interestingly, negative substance use expectancies did not emerge as a significant predictor of self-efficacy in this study, despite being assessed alongside positive expectancies. This finding may initially appear counterintuitive, as one might expect that awareness of negative consequences would enhance motivation for abstinence and thereby strengthen self-efficacy. However, several theoretical and empirical considerations help explain this null finding. First, individuals enrolled in treatment programs have typically already experienced substantial negative consequences from their substance use, as evidenced by their entry into rehabilitation. Thus, awareness of negative effects may be relatively uniform across the sample, resulting in restricted variance and limited predictive utility. Second, according to dual-process models of addiction, negative expectancies may exert their influence on behaviour through pathways other than self-efficacy, such as fear-based avoidance motivation or outcome expectancies that operate independently of efficacy beliefs (Moss and Albery, 2009; Stacy and Wiers, 2010; Evans *et al*., 2013). Research has shown that while expectancies are related to outcomes, there is little evidence to support the notion that targeting outcome expectancies alone will substantially change overall substance use behaviours once individuals have entered treatment (Gwaltney *et al*., 2005). Third, in the presence of strong positive expectancies, negative expectancies may be cognitively minimized, discounted, or temporally delayed in individuals' decision-making processes, a phenomenon known as temporal discounting (Murphy and MacKillop, 2006; MacKillop *et al*., 2010; Bickel *et al*., 2014). Substance users often prioritize immediate positive effects over future negative consequences, particularly when experiencing cravings or in high-risk situations (Gwaltney *et al*., 2005).

The finding that age did not significantly predict drug use avoidance self-efficacy is noteworthy. Although age was entered as a covariate in the regression model, it demonstrated no meaningful association with self-efficacy at any step of the analysis. This null finding may be attributable to several factors. The age range of the sample (17–44 years) was relatively restricted, with most participants being young adults. This limited variability in age may have constrained the ability to detect age-related effects on self-efficacy. Additionally, in clinical populations actively engaged in structured treatment programs, the intensive therapeutic interventions and psychoeducational components may reduce or eliminate age differences in self-efficacy that might otherwise be observed in community samples. Treatment programs typically provide

standardized information, skills training, and support regardless of participants' age, potentially equalizing self-efficacy levels across different age groups. Finally, the influence of age on recovery outcomes may be mediated by other factors such as treatment motivation, social support, and duration of substance use, rather than exerting direct effects on self-efficacy beliefs.

Clinical Implications

The findings of this study have important implications for clinical practice in substance use disorder treatment in Nigeria and similar contexts. First, the documentation of substance use patterns reveals that treatment programs must be prepared to address polysubstance use, with particular attention to cannabis, alcohol, codeine, and sedatives as the most prevalent substances. Single-substance focused interventions may be inadequate for populations characterized by complex polysubstance use profiles. Treatment protocols should incorporate comprehensive assessment of all substances used and develop integrated approaches that address multiple substances simultaneously rather than sequentially.

Second, the strong negative association between positive expectancies and self-efficacy suggests that cognitive-behavioural interventions specifically targeting substance use expectancies should be central components of rehabilitation programs. Recent systematic reviews have confirmed that CBT demonstrates moderate to strong efficacy for substance use disorders, with evidence supporting its use as both monotherapy and in combination with other treatments (Boness *et al*., 2023; Magill and Kiluk, 2023). Expectancy challenge interventions, which aim to modify maladaptive beliefs about substance effects through behavioural experiments, cognitive restructuring, and psychoeducation, have shown particular promise in enhancing treatment outcomes (McHugh *et al*., 2010). These interventions typically involve having patients identify their positive expectancies, examine the accuracy of these beliefs through structured exercises, and develop alternative coping strategies that do not rely on substance use.

Relapse prevention techniques that specifically challenge patients' expectations of perceived positive effects should be integrated throughout the treatment continuum (Carroll and Onken, 2005). Therapists can help patients recognize that positive expectancies often overestimate actual drug effects while underestimating negative consequences. Group therapy formats may be particularly effective for expectancy challenge, as patients can share experiences that disconfirm exaggerated positive beliefs and provide social support for alternative behaviours. Additionally, motivational enhancement techniques that highlight the discrepancy between anticipated positive effects and actual negative consequences of continued use may strengthen patients' commitment to abstinence and enhance self-efficacy (Lee and Oei, 1993).

Third, treatment programmes should incorporate comprehensive assessments of substance use expectancies at treatment entry to identify individuals at elevated risk for poor self-efficacy and implement tailored interventions accordingly. Given that positive expectancies accounted for 20% of the variance in self-efficacy, routine screening for these cognitive beliefs could inform treatment planning and resource allocation. Patients with particularly strong positive expectancies may benefit from intensive cognitive interventions early in treatment before these beliefs undermine their confidence in maintaining abstinence.

Limitations and Future Directions

Several limitations of this study should be acknowledged. First, the cross-sectional design limits causal inferences about the relationships between expectancies and self-efficacy. Although theory and prior research suggest that positive expectancies may undermine self-efficacy, reciprocal influences are also plausible. Longitudinal studies tracking changes in expectancies and self-efficacy from treatment entry to post-discharge could clarify temporal patterns and their predictive value for recovery outcomes such as abstinence and relapse.

Second, the sample was drawn from three government rehabilitation centres in one Nigerian region, limiting generalizability to private facilities or other cultural contexts in Nigeria. The predominance of male (80.1%), Igbo (81.0%), and Christian (76.4%) participants reflects the centers' demographics but restricts broader applicability. Future studies should recruit more diverse samples across treatment settings, regions, and populations to enhance external validity.

Third, reliance on self-report measures may introduce biases such as social desirability or recall errors, potentially underestimating substance use. Incorporating biological verification (e.g., urine or hair analysis) and collateral reports from family or staff could improve data accuracy. Additional research on the moderators and mediators of the impact of substance use expectancies on self-efficacy for avoiding substance use is also needed to inform appropriate interventions.

Additionally, measuring substance use expectancies among individuals currently in rehabilitation may introduce recall bias, as participants may be reporting historical beliefs about substance effects rather than current expectancies. Since expectancies are most salient during active substance use periods, responses obtained in the protected environment of a rehabilitation center may not fully capture the strength of expectancies that participants experience in real-world contexts where substance use opportunities are present.

Conclusion

This study revealed that cannabis, alcohol, shisha, coffee, codeine, and sedatives were the most frequently used psychoactive substances among patients in drug rehabilitation centers in Southeast Nigeria, indicating substantial polysubstance use patterns requiring comprehensive treatment approaches. Positive substance use expectancies significantly predicted reduced drug use avoidance self-efficacy, accounting for 20% of the variance in this outcome, while negative expectancies and age did not demonstrate significant predictive effects. The findings underscore the critical role of cognitive factors, particularly positive outcome expectancies, in influencing recovery confidence among individuals undergoing treatment for SUD. Cognitive-behavioural interventions specifically targeting positive substance use expectancies through expectancy challenge techniques may be crucial for enhancing self-efficacy, improving treatment outcomes, and preventing relapse in this clinical population.

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