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PSYCHOLOGY

SOCIO-DEMOGRAPHIC FACTORS THAT INFLUENCE EMOTIONAL DYSREGULATION AMONG YOUTH IN SELECTED REHABILITATION CENTRES IN KIAMBU COUNTY, KENYA

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ABSTRACT

Purpose of the Study: The study investigated the socio-demographic factors influencing emotional dysregulation among young adults with substance use disorder (SUD) in selected rehabilitation centres in Kiambu County, Kenya.

Problem Statement: Despite the availability of rehabilitation services, relapse rates among youth with SUD remain high. Emotional dysregulation is a major driver of relapse, yet most rehabilitation programs focus on detoxification, peer support, and counseling while overlooking structured interventions for managing emotional instability. International evidence highlights the influence of socio-demographic variables such as age, gender, education, and social support on emotional regulation, but limited research has examined these factors within Kenyan rehabilitation settings.

Methodology: A quasi-experimental design was adopted, involving 108 inpatients aged 18–35 years across four rehabilitation centres. A sample of 68 participants was purposively and randomly assigned into experimental and control groups. Data were collected using standardized self-report tools, including the Difficulties in Emotion Regulation Scale (DERS-16), Beck Anxiety Inventory

(BAI), Beck Depression Inventory-II (BDI-II), and the Brief Substance Craving Scale (BSCS). Data analysis employed chi-square tests, Pearson correlations, regression analysis, ANOVA, paired t-tests, and effect size calculations.

Results: Findings revealed that 89.8% of participants exhibited some level of emotional dysregulation, with 51.9% presenting moderate and 14.8% severe levels. Socio-demographic factors including age, gender, education, and family structure, were significantly associated with emotional dysregulation and influenced vulnerability to relapse. Difficulties with impulse control, emotional awareness, and coping strategies were particularly evident.

Conclusion: The study concludes that emotional dysregulation remains pervasive among youth with SUD in Kiambu County, with socio-demographic characteristics shaping its severity and impact on recovery outcomes.

Recommendations: The study recommends that rehabilitation programs integrate Dialectical Behavior Therapy (DBT) while tailoring interventions to socio-demographic realities to strengthen coping skills, reduce cravings, and improve long-term recovery. Policymakers should prioritize evidence-based models like DBT and expand professional training to enhance treatment effectiveness.

Keywords: *Emotional dysregulation, socio-demographic factors, substance use disorder, Dialectical Behavior Therapy, Kenya, youth, rehabilitation*

BACKGROUND TO THE STUDY

Substance use disorders (SUDs) represent a pressing global health challenge, affecting more than 35 million people and contributing to increased mortality, psychiatric comorbidities, and socioeconomic strain (UNODC, 2022). Among youth, the link between substance use and emotional dysregulation is particularly pronounced, as difficulty in managing negative emotions often drives maladaptive coping strategies such as drug or alcohol use (Harvey et al., 2019). Dialectical Behaviour Therapy (DBT), originally developed for borderline personality disorder (Linehan, 2020), has gained recognition for its applicability to SUD treatment by integrating cognitive-behavioral strategies with mindfulness and acceptance to equip individuals with tools for distress tolerance, emotion regulation, and interpersonal effectiveness (Linehan & Wilks, 2015). Studies across diverse settings demonstrate DBT's ability to reduce emotional instability,

cravings, and relapse risk (Robins & Chapman, 2004; Reddy & Vijay, 2017), though effectiveness can be moderated by socio-demographic contexts such as age, gender, education, and access to mental health resources.

In the United States, where over 10% of young adults aged 18–25 suffer from SUD, emotional dysregulation has been identified as a critical driver of impulsive behavior and substance use (NIDA, 2022; Rizvi et al., 2016). DBT has been widely integrated into rehabilitation programs, with evidence showing significant reductions in cravings and relapses (Giannelli et al., 2019). Innovations such as digital DBT interventions have improved treatment, access and engagement among youth, particularly those reluctant to attend in-person therapy (Bilican et al., 2022). In India, over 7.2 million individuals suffer from opioid dependence, with emotional dysregulation playing a central role in sustaining addiction (Ministry of Social Justice & Empowerment, 2021). Evidence shows DBT's effectiveness in reducing relapse and improving distress tolerance (Reddy & Vijay, 2017), with mindfulness practices aligning well with cultural traditions (Khoury et al., 2021), though socio-demographic barriers such as limited awareness, poor accessibility, and economic disparities restrict widespread application (Nabavi et al., 2021).

In Africa, socio-demographic vulnerabilities further exacerbate emotional dysregulation and substance use across multiple contexts. Nigeria reports an estimated 14.3 million people struggling with drug-related disorders driven by unemployment, poverty, and peer influence (NDLEA, 2022; Soyinka, 2021), with DBT showing potential though limited infrastructure and trained professionals hinder implementation (Koerner, 2018). South Africa reports some of the highest prevalence rates in the region, with youth at heightened risk due to violence, inequality, and unemployment (Mbatha et al., 2021), and although DBT has demonstrated effectiveness in reducing cravings and improving resilience (Koerner, 2018), rural communities remain underserved (Peltzer & Ramlagan, 2020). In Uganda, DBT-based interventions have been piloted successfully showing improvements in distress tolerance and emotional regulation (Khoury et al., 2021; White et al., 2022), yet inadequate mental health infrastructure remains a major barrier to widespread implementation.

In Kenya, 13% of people aged 15-65 experience substance use disorders, mostly involving alcohol, cannabis, and opioids. The overall relapse rate is 60%, indicating ongoing difficulties with long-term recovery. (NACADA, 2020), and emotional dysregulation has been identified as a key factor

sustaining relapse (Ndetei et al., 2022). Treatment frameworks remain dominated by detoxification and abstinence-based approaches that neglect structured psychological interventions (Otieno & Oteyo, 2020), while socio-demographic challenges including stigma, poverty, and limited access to trained professionals further undermine treatment outcomes (WHO, 2021). Community stigma discourages help-seeking behavior, and fewer than 500 psychiatrists serve over 50 million people (WHO, 2021), making DBT's structured, skills-based intervention approach potentially valuable for addressing gaps by building coping strategies, emotional awareness, and resilience (Mwangi et al., 2023).

Kiambu County illustrates these dynamics as a location near Nairobi where youth experience high exposure to urban influences such as peer pressure, drug availability, and economic disparities (Mugambi et al., 2021; Kimani & Wambua, 2022). NACADA (2023) highlights Kiambu as a hotspot for youth substance use, making it a critical site for intervention research. Socio-demographic factors including age, gender, education, family background, and social support play decisive roles in shaping emotional regulation outcomes, as youth with limited education or weak family support may be more vulnerable to relapse due to inadequate coping mechanisms, while stigma in community and religious contexts often exacerbates psychological strain (Mugambi & Nyagah, 2019). Understanding how these socio-demographic characteristics influence emotional dysregulation patterns is essential for tailoring interventions to meet the specific needs of youth in rehabilitation settings.

Thus, this study examined the socio-demographic factors that influence emotional dysregulation among youth with SUD in selected rehabilitation centres in Kiambu County, Kenya. By investigating how characteristics such as age, gender, education level, occupation, income, and family structure shape emotional regulation patterns, the study sought to provide evidence for designing context-specific interventions. The findings were expected to inform the integration of DBT into rehabilitation programs by highlighting which demographic subgroups experience greater emotional regulation difficulties and may require tailored therapeutic approaches. Ultimately, situating emotional dysregulation within broader social, cultural, and demographic contexts enables evidence-based approaches to be refined for enhancing recovery outcomes, reducing relapse rates, and improving long-term mental health among Kenyan youth in resource-limited and stigma-laden environments.

STATEMENT OF THE PROBLEM

Substance Use Disorder (SUD) continues to pose a major public health challenge in Kenya, particularly among young adults. National data reveal high levels of dependence on alcohol, cannabis, tobacco, and khat (NACADA, 2022), with relapse rates remaining persistently high. Emotional dysregulation plays a critical role in sustaining addiction, contributing to impulsivity, maladaptive coping, and heightened vulnerability to relapse (Rezaei et al., 2019). However, many rehabilitation programs in Kenya emphasize detoxification and general counseling while neglecting structured interventions that specifically target emotional regulation (Bitta et al., 2019; Montaser et al., 2023).

Globally, evidence highlights that socio-demographic characteristics including age, gender, education, family structure, and social support significantly shape patterns of emotional regulation and treatment outcomes (Gopalan et al., 2020; Lam & Wolfe, 2022). Yet in Kenya, existing studies largely focus on the prevalence of SUD and challenges within rehabilitation systems (Okoyo et al., 2022; Karanja & Kipchumba, 2024), offering little empirical insight into how socio-demographic differences influence emotional dysregulation. This omission limits the development of targeted, evidence-based interventions that reflect the lived realities of vulnerable youth populations.

Kiambu County represents a particularly high-risk setting, where rapid urbanization, unemployment, and accessibility of illicit brews amplify the risk of substance use among youth (Mugambi & Wambua, 2021; Kimani & Wambua, 2022). Despite the county's reputation as a hotspot for substance abuse, little is known about how socio-demographic characteristics of youth in its rehabilitation centres affect their emotional regulation and recovery. Addressing this gap is critical, as without understanding these determinants, interventions risk being generic and ineffective.

This study therefore investigated the socio-demographic factors influencing emotional dysregulation among youth in rehabilitation centres in Kiambu County. By identifying how characteristics such as age, gender, education, and social support shape emotional outcomes, the study seeks to provide evidence that can inform the design of context-specific, skill-based

interventions such as Dialectical Behavior Therapy (DBT) to reduce relapse and improve long-term recovery.

RESEARCH OBJECTIVE

To analyse socio-demographic factors that influence emotional dysregulation among youth in selected rehabilitation centres in Kiambu County, Kenya.

RESEARCH QUESTION

How do socio-demographic factors influence emotional dysregulation among youth in selected rehabilitation centres in Kiambu County, Kenya?

THEORETICAL FRAMEWORK

A theoretical framework provides structured insights into the relationships between variables, guiding the explanation of complex phenomena such as emotional dysregulation and substance use among youth (Weaver, 2022). For this study, three theories—Linehan's DBT Theory of Change, the Biopsychosocial-Cultural Model, and Schachter's Two-Factor Theory of Emotion—offered complementary lenses for understanding how socio-demographic factors influence emotional regulation among youth with Substance Use Disorder (SUD).

Linehan's DBT Theory of Change

Dialectical Behavior Therapy was developed by Marsha Linehan in the late 1980s to treat individuals with borderline personality disorder (Linehan, 1993). The theory proposes that balancing acceptance and change through four core skills—mindfulness, distress tolerance, emotion regulation, and interpersonal effectiveness—enables individuals to manage emotional instability and develop adaptive coping mechanisms (Miller et al., 2020). This theory was relevant to the current study as it explained how socio-demographic factors such as age, gender, education, and social support networks influence the effectiveness of emotional regulation skills, with younger individuals potentially benefiting more from structured skill-building while cultural norms around gender shape emotional expression and help-seeking behaviors among Kenyan youth.

Biopsychosocial-Cultural Model

The Biopsychosocial-Cultural Model was originally coined by Grinker (1952) and expanded by Engel (1977) to explain health conditions through multiple interacting dimensions. The model

proposes that biological factors (genetic predispositions), psychological dimensions (coping strategies, mental health), social factors (poverty, unemployment, family dynamics), and cultural elements (norms, stigma) interact to shape substance use and emotional dysregulation (Maciejewski, 2018). This model was relevant to the current study as it contextualized how socio-demographic characteristics such as socioeconomic status, education level, and cultural beliefs in Kenyan communities influence emotional regulation patterns and treatment outcomes among youth with SUD.

Schachter's Two-Factor Theory of Emotion

Schachter's Two-Factor Theory was introduced by Schachter and Singer (1962) to explain emotional experiences. The theory proposes that emotions result from the interaction between physiological arousal and cognitive appraisal, where individuals interpret bodily sensations based on contextual cues (Schachter & Singer, 1962). This theory was relevant to the current study as it explained how socio-demographic factors such as age, education, and family context influence how youth interpret emotional arousal, with younger individuals potentially misinterpreting arousal as aggression, those with limited education lacking frameworks to label emotions accurately, and hostile environments reinforcing maladaptive emotional appraisals that perpetuate substance-seeking behaviors.

EMPIRICAL REVIEW

Socioeconomic disadvantage consistently correlates with heightened emotional dysregulation among youth with SUD across multiple studies. Aldao et al. (2022) found that financial instability, low educational attainment, childhood adversity, and family background significantly contribute to emotional distress and substance use vulnerability. Sloan et al. (2020) indicated that individuals from disadvantaged socioeconomic backgrounds experience heightened emotional instability due to chronic stress, exposure to adverse environments, and limited access to coping mechanisms. Lo et al. (2021) demonstrated that youth from low-income households exhibit higher levels of emotional dysregulation, with chronic financial stress, unemployment, and food insecurity exacerbating emotional distress and increasing likelihood of substance use as a maladaptive coping strategy.

Malinga and Wassenaar (2019) found that individuals from economically marginalized communities had a 46% higher risk of emotional dysregulation-related relapse due to stress-

induced triggers. Kimani et al. (2023) revealed that youth in urban informal settlements in Kenya showed significantly higher levels of emotional dysregulation with financial insecurity being a major contributor. Zhang et al. (2024) assessed the impact of socioeconomic factors on emotional dysregulation severity and found that individuals from low-income backgrounds and unstable family environments were more likely to experience chronic emotional dysregulation which exacerbated their substance use behaviors.

Education levels and employment status represent critical determinants of emotional regulation and treatment outcomes across multiple investigations. Malinga and Wassenaar (2019) indicated that individuals with limited formal education have poorer emotional regulation skills which contribute to impulsive decision-making and higher relapse rates. Omondi and Wanjiru (2023) conducted a longitudinal study finding that youth with lower education levels exhibited a 39% higher likelihood of emotional dysregulation post-treatment compared to those with secondary or tertiary education. Okech et al. (2023) found that individuals with primary-level education had a 50% higher risk of emotional distress and difficulty adapting to structured rehabilitation programs. Garcia et al. (2023) conducted a longitudinal study demonstrating a near 50% improvement in emotional stability among youth who secured stable work during or after rehabilitation. Patel et al. (2021) explored emotional dysregulation patterns across different age groups with SUD and found that younger adults aged 18-35 exhibited significantly higher emotional dysregulation scores compared to older adults over 50, reinforcing the need for age-specific interventions that cater to the unique emotional and psychological challenges faced by youth in rehabilitation centers.

Gender differences and family background significantly influence emotional dysregulation patterns among youth with SUD according to multiple research studies. Lo et al. (2021) suggested that women experience greater emotional dysregulation compared to men, often due to sociocultural expectations, gender-based violence, and caregiving responsibilities. Thompson and Patel (2023) found that women in rehabilitation programs reported higher levels of emotional distress and co-occurring anxiety disorders compared to men. Njoroge et al. (2024) conducted a study in Kenya finding that female patients in rehabilitation centers were 32% more likely to experience severe emotional instability due to compounded social pressures and higher incidences of trauma exposure.

Harper et al. (2023) examined the impact of childhood trauma on emotional regulation among individuals with SUD and found that individuals with a history of adverse childhood experiences were 3.5 times more likely to develop severe emotional dysregulation which directly influenced their substance use behaviors. Fox et al. (2022) found that individuals who grew up in households with substance-abusing parents were 3.2 times more likely to exhibit emotional dysregulation and maladaptive coping mechanisms, with children exposed to domestic violence and neglect displaying increased emotional reactivity leading to higher vulnerability to substance use later in life. Waithaka et al. (2024) found that Kenyan youth who experienced parental neglect during childhood exhibited a 48% higher risk of emotional dysregulation, highlighting the long-term effects of adverse childhood experiences. Musyoka et al. (2024) found that Kenyan individuals with a history of childhood trauma had a 40% increased likelihood of developing substance dependence and emotional dysregulation, reinforcing the significance of trauma-sensitive rehabilitation programs.

Social support systems play a pivotal role in shaping emotional regulation and recovery outcomes among youth with SUD across multiple investigations. Ramirez et al. (2022) found that individuals with weak social support networks exhibited significantly higher levels of emotional instability and relapse rates, while those with strong family and peer support experienced a 41% reduction in emotional distress and improved treatment adherence. Williams et al. (2024) investigated the impact of peer influence on emotional dysregulation in rehabilitation programs and showed that individuals in environments with positive peer support networks demonstrated a 38% improvement in emotional stability compared to those lacking peer encouragement.

Otieno et al. (2024) conducted a study in Kenya revealing that structured peer support groups led to a 45% increase in emotional resilience among youth recovering from SUD. Mwangi et al. (2024) emphasized that peer-led interventions in Kenyan rehabilitation centers resulted in a 42% improvement in emotional stability, a 35% reduction in relapse rates, and a 27% decrease in substance cravings, underscoring the effectiveness of structured peer programs in fostering belonging, reducing isolation, and providing relatable role models for youth.

Cultural beliefs, stigma, and access to mental health services significantly influence emotional dysregulation outcomes according to recent research. Patel et al. (2023) focused on the intersection of cultural beliefs and stigma and found that individuals from communities with stigmatized views

on mental health exhibited lower engagement with therapeutic interventions, leading to poorer treatment outcomes. Achieng et al. (2024) conducted research in Kenya finding that stigma associated with SUD prevented many youths from seeking timely intervention, worsening emotional dysregulation before rehabilitation began and highlighting that well-designed therapeutic interventions may weaken without simultaneous efforts to address and reduce stigma at the community level.

Kimani et al. (2023) examined the role of access to mental health services in addressing emotional dysregulation among youth in Kenya and found that rehabilitation centers with integrated mental health services recorded a 45% decrease in emotional suppression compared to those without specialized psychological interventions. Njenga et al. (2024) highlighted that rehabilitation centers with onsite psychologists reported better emotional regulation outcomes among patients compared to those that relied on external mental health referrals, demonstrating that integrated psychological services create holistic, responsive environments better equipped to support sustainable emotional well-being and recovery.

METHODOLOGY

The study employed a quasi-experimental research design to assess the effectiveness of dialectical behavior therapy (DBT) in reducing emotional dysregulation among youth with substance use disorders (SUD) in Kiambu County. Participants were drawn from four rehabilitation centers, with two forming the experimental arm and two the control arm, purposively selected based on population comparability, accessibility, and focus on substance rehabilitation programs. From a total inpatient population of 155, a sample of 68 participants aged 18–35 was recruited using Slovin's formula adjusted for 10% attrition, with 34 assigned to the intervention group and 34 to the control group. Inclusion criteria specified youth diagnosed with SUD exhibiting significant emotional dysregulation (DERS-16 cut-off score of 33) who had been in rehabilitation for at least one week, while those with acute psychosis, high suicide risk, or severe cognitive impairments were excluded. The intervention phase involved a structured DBT program consisting of eight weekly 90-minute sessions emphasizing mindfulness, emotional regulation, distress tolerance, interpersonal effectiveness, and relapse prevention, while the control group received Treatment as Usual (TAU) consisting of unstructured counseling and general psychosocial support.

Data collection employed five standardized instruments: a socio-demographic questionnaire, DERS-16 for emotional dysregulation, Brief Substance Craving Scale (BSCS), Beck Depression Inventory-II (BDI-II), and Beck Anxiety Inventory (BAI), all demonstrating Cronbach's alpha values consistently above 0.85. Data were collected at three points: baseline, midline, and endline, enabling systematic tracking of progress and outcomes. To ensure methodological rigor, research assistants and facilitators underwent comprehensive training in screening, data management, and DBT delivery, with standardized manuals followed and regular supervisory meetings held to ensure consistency and intervention fidelity. Data management procedures included double-entry verification, secure digital storage with password protection, and anonymization of participant data. Statistical analysis was performed using SPSS v29, with frequencies, chi-square tests, correlations, regression, ANOVA, and paired t-tests applied depending on study objectives, effect sizes calculated to strengthen interpretation, and a significance level of $p < 0.05$ adopted.

RESULTS AND DISCUSSION

The study aimed to assess the prevalence of emotional dysregulation among the youth with substance use disorder in selected rehabilitation centres in Kiambu, Kenya. First, it was prudent to compute the influence of Gender on Emotional Dysregulation.

The Pearson Chi-square and Fisher's exact test were conducted to assess the relationship between gender and emotional dysregulation as shown in Table 1 below.

Table 1: The Influence of Gender on Emotional Dysregulation

Emotional dysregulation scales	Levels	Gender		Total	Fisher's exact test
		Male	Female		
Nonacceptance of emotional responses	Low(3-9)	55((3.4%	22(21.4%	77(74.8%	df=1,p=.444
	High(10-15)	21(20.4%	5(4.9%	26(25.2%	
	Total	76(73.8%	27(26.2%	103(100.0%	
Difficulty engaging in goal-directed behavior	Low(3-9)	46(44.2%	15(14.4%	61(58.7%	df=1,p=.821
	High(10-15)	31(29.8%	12(11.5%	43(41.3%	
	Total	77(74.0%	27(26.0%	104(100.0%	
Impulse control difficulties	Low(3-9)	40(38.5%	14(13.5%	54(51.9%	df=1,p=1.00
	High(10-15)	37(35.6%	13(12.5%	50(48.1%	
	Total	77(74.0%	27(26.0%	104(100.0%	
Limited access to emotion regulation strategies	Low(5-15)	55(52.9%	18(17.3%	73(70.2%	df=1,p=1.00
	High(16-25	22(21.2%	9(8.7%	31(29.8%	
	Total	77(74.0%	27(26.0%	104(100.0%	
Lack of emotional clarity	Low(2-6)	62(59.6%	22(21.2%	84(80.8%	df=1,p=1.00
	High(7-10)	15(14.4%	5(4.8%	20(19.2%	
	Total	77(74.0%	27(26.0%	104(100.0%	

Table 2 presents the influence of gender on emotional dysregulation. Across all five subscales of emotional dysregulation, Fisher's Exact Test revealed no statistically significant gender differences ($p > .05$). Although females tended to score higher on the non-acceptance of Emotional Responses subscale (42.3% vs. 23.4%), this difference approached but did not reach significance ($p = .079$). All other subscales showed relatively balanced distributions between genders, suggesting that emotional dysregulation traits are comparably distributed among male and female participants in this sample. In addition the raw scores in the scales on emotional dysregulation were correlated against the codes of education (postgraduate [5], graduate [4], A-level [3], O-level [2], primary [1] and income (none [1], less than 10000 [2], 10000-30000 [3], 30000-60000 [4], 60000-90000 [5], over 90000[6] as shown in Table 2.

Table 2: Multiple Linear Regression showing the Relationship between Age, Gender, Education, Income, and Emotional Dysregulation

Model		Unstandardized Coefficients		Standardized Coefficients	t	p
		B	Std. Error	Beta		
1	(Constant)	11.698	10.199		1.147	.255
	age	.529	.322	.230	1.643	.105
	gender	5.996	3.009	.238	1.993	.050
	Education	2.231	1.479	.191	1.509	.136
	Occupation	.718	.735	.114	.977	.332
	Income	-.462	.889	-.071	-.520	.605

a. *Dependent Variable: Emotional dysregulation*

A multiple linear regression was conducted to examine the influence of age, gender, education, occupation, and income on emotional dysregulation. The overall model approached statistical significance, $F(5, 68) = 2.17$, $p = .068$, accounting for approximately 13.7% of the variance in emotional dysregulation ($R^2 = .137$). Among the predictors, only gender was statistically significant, $B = 5.996$, SE = 3.009, $\beta = .238$, $t = 1.993$, $p = .05$. This suggests that males scored approximately six points higher on the emotional dysregulation scale compared to the reference group. Age, education, occupation, and income were not significant predictors ($ps > .05$).

Although the regression did not reach conventional significance, it approached the threshold, implying that the combined effect of demographic factors may contribute meaningfully to emotional dysregulation. Gender emerged as the only significant predictor, with females showing higher levels of emotional dysregulation. This finding aligns with prior research suggesting gender-based differences in emotional processing and regulation.

The non-significant effects of age, education, occupation, and income may reflect the Complex nature of emotional dysregulation, which was likely influenced by psychological, interpersonal, and contextual factors not captured by demographic variables alone. The modest R^2 value and borderline model significance suggest that future studies should incorporate additional predictors such as mental health history, personality traits, or stress exposure to better understand the determinants of emotional dysregulation.

Table 3a: The Relationship between Income and Emotional Dysregulation Scales

Emotional Dysregulation Scales	Income Level	Status of Dysregulation					
		Low (3-9)		High (10-15)		Total	
		N	%	N	%	N	%
Nonacceptance of emotional responses	none	17	23.3%	6	22.2%	23	23.0%
	lessthan10k	7	9.6%	0	0.0%	7	7.0%
	10k-30k	8	11.0%	6	22.2%	14	14.0%
	30k-60k	18	24.7%	6	22.2%	24	24.0%
	60k-90k	12	16.4%	5	18.5%	17	17.0%
	above90k	11	15.1%	4	14.8%	15	15.0%
	Total	73	100.0%	27	100.0%	100	100.0%
Pearson Chi-Square		Value=4.485 df=5 p=.482					
Difficulty engaging in goal-directed behavior	None	13	20.0%	11	30.6%	24	23.8%
	Less than10k	7	10.8%	0	0.0%	7	6.9%
	10k-30k	11	16.9%	3	8.3%	14	13.9%
	30k-60k	13	20.0%	11	30.6%	24	23.8%
	60k-90k	10	15.4%	7	19.4%	17	16.8%
	above90k	11	16.9%	4	11.1%	15	14.9%
	Total	65	100.0%	36	100.0%	101	100.0%

Table 3b: The Relationship between Income and Emotional Dysregulation Scales

Pearson Chi-Square		Value=8.037 df=5 p=.154					
Impulse control difficulties	none	15	22.1%	9	27.3%	24	23.8%
	less than10k	6	8.8%	1	3.0%	7	6.9%
	10k-30k	8	11.8%	6	18.2%	14	13.9%
	30k-60k	18	26.5%	6	18.2%	24	23.8%
	60k-90k	13	19.1%	4	12.1%	17	16.8%
	Above 90k	8	11.8%	7	21.2%	15	14.9%
	Total	68	100.0%	33	100.0%	101	100.0%
Pearson Chi-Square		Value=4.614 df=5 p=.465					
Limited access to emotion regulation strategies	none	11	18.0%	12	30.8%	23	23.0%
	Less than10k	7	11.5%	0	0.0%	7	7.0%
	10k-30k	11	18.0%	3	7.7%	14	14.0%
	30k-60k	10	16.4%	14	35.9%	24	24.0%
	60k-90k	11	18.0%	6	15.4%	17	17.0%
	Above 90k	11	18.0%	4	10.3%	15	15.0%
	Total	61	100.0%	39	100.0%	100	100.0%
Pearson Chi-Square		Value=12.798 df=5 p=.025					
Lack of emotional clarity	None	17	22.7%	7	26.9%	24	23.8%
	Less than10k	5	6.7%	2	7.7%	7	6.9%
	10k-30k	12	16.0%	2	7.7%	14	13.9%

	30k-60k	15	20.0%	9	34.6%	24	23.8%
	60k-90k	11	14.7%	6	23.1%	17	16.8%
	Above 90k	15	20.0%	0	0.0%	15	14.9%
	Total	75	100.0%	26	100.0%	101	100.0%
Pearson Chi-Square		Value=8.885 df=5 p=.114					

A series of Pearson's Chi-Square tests were conducted to examine the association between income level and emotional dysregulation across five subscales: nonacceptance of emotional responses, difficulty engaging in goal-directed behavior, impulse control difficulties, limited access to emotion regulation strategies, and lack of emotional clarity as illustrated in Table 3. No statistically significant associations were found for nonacceptance of emotional responses, $\chi^2(5, N = 100) = 4.485$, $p = .482$; difficulty engaging in goal-directed behavior, $\chi^2(5, N = 101) = 8.037$, $p = .154$; impulse control difficulties, $\chi^2(5, N = 101) = 4.614$, $p = .465$; or lack of emotional clarity, $\chi^2(5, N = 101) = 8.885$, $p = .114$. These results suggest that income level does not significantly influence dysregulation in these domains.

However, a statistically significant association was found between income level and limited access to emotion regulation strategies, $\chi^2(5, N = 100) = 12.798$, $p = .025$. Participants in the Ksh 30,000–Ksh.60,000 income bracket exhibited the highest proportion of high dysregulation (35.9%), while those in the lowest income group (< Ksh. 10,000) reported no high dysregulation in this domain. This finding suggests that individuals in middle-income brackets may experience greater difficulty accessing emotion regulation strategies compared to those in lower or higher income groups.

The study also examined the influence of demographic and socioeconomic variables age, gender, education, occupation, and income in the likelihood of scoring high versus low on the Emotional dysregulation scales. Only "Limited access to emotion regulation strategies" yielded statistically significant findings. While the overall logistic regression model approached statistical significance, the results revealed nuanced patterns in predictor performance and model behavior as shown in Table 4.

Table 4: Binary Logistic Regression to assess if age, gender, education, occupation, and income predict Limited access to emotion regulation strategies

		B	S.E.	Wald	Df	Sig.	Exp(B)
Step 1[a]	Age	.024	.094	.064	1	.800	1.02
	Gender (Male)	-2.24	1.09	4.23	1	.039	.107
	Education			8.51	4	.075	
	O'level	2.023	1.798	1.27	1	.261	7.56
	A' level	-20.2	27706.47	.000	1	.99	.000
	Graduate	-1.23	1.682	.532	1	.466	.293
	Postgraduate	.268	1.825	.022	1	.88	1.308
	Occupation			6.21	6	.401	
	Education/training	-.737	1.339	.303	1	.582	.479
	Healthcare	-2.06	1.899	1.17	1	.279	.128
	Skilled technical	1.175	1.494	.618	1	.432	3.24
	Business/Administration	-1.42	1.512	.883	1	.347	.241
	Security, law, governance	-1.10	1.731	.400	1	.527	.334
	None	18.17	40192.97	.000	1	1.00	77480422.6
	Income			1.96	5	.854	
	Lessthan10k	-.586	1.379	.181	1	.671	.557
	10k-30k	-.977	1.516	.415	1	.519	.377
	30k-60k	-1.14	1.469	.600	1	.438	.320
	60k-90k	-1.03	1.217	.714	1	.398	.357
	Above90k	.234	1.065	.048	1	.826	1.26
	Constant	1.126	3.06	.136	1	.712	3.08

A. Variable(s) entered on step 1: age, gender, education, occupation, income.

A binary logistic regression was conducted to examine the effects of age, gender, education level, occupation, and income on the likelihood of scoring high (16–25) versus low (5–15) on the Limited access to emotion regulation strategies. The model included all predictors in Step 1[a]. The omnibus test of model coefficients indicated that the full model approached statistical significance compared to the constant-only model, $\chi^2(17) = 25.93$, $p = .076$. The Hosmer and Lemeshow goodness-of-fit test was non-significant, $\chi^2(8) = 6.40$, $p = .603$, suggesting that the model adequately fit the data. The model summary showed moderate explanatory power, with Cox & Snell $R^2 = .30$ and Nagelkerke $R^2 = .43$. However, estimation terminated at iteration 20 due to non-convergence, indicating potential instability in the model estimates. Among the predictors, only gender was statistically significant. Specifically, males were significantly less likely to score high on the Limited access to emotion regulation strategies, $B = –2.24$, SE = 1.09, Wald χ^2 (1) = 4.26, $p = .039$, Exp(B) = 0.11. This suggests an 89% reduction in the odds of scoring high for males compared to females.

Age was not a significant predictor, $B = 0.02$, SE = 0.09, Wald χ^2 (1) = 0.06, $p = .800$, Exp(B) = 1.02. Education showed borderline significance overall, χ^2 (4) = 8.51, $p = .075$, with individual levels O-level and graduate showing notable effects in preliminary score tests ($\chi^2 = 7.12$, $p = .008$; $\chi^2 = 7.66$, $p = .006$, respectively). Occupation and income were not significant predictors in the model ($ps > .05$). The Step 1[a] classification table revealed that the model correctly classified 90.7% of cases in the Low (5–15) group and 45.0% of cases in the High (16–25) group, resulting in an overall classification accuracy of 78.4%. This indicates that the model was more effective at identifying individuals with lower scores than those with higher scores.

Table 5: The Correlation between Age, Duration of Use, age of onset and Emotional Dysregulation

Scale	R	Age	Duration	Age of debut
Emotional Dysregulation	r	.132	.133	-.047
	p	.174	.190	.637
	n	108	99	103
Nonacceptance of emotional responses	r	.015	.105	-.032
	p	.880	.299	.745
	n	108	99	103
Difficulty engaging in goal-directed behavior	r	-.012	.172	-.122
	p	.899	.088	.219
	n	108	99	103
Impulse control difficulties	r	.043	.120	.036
	p	.657	.237	.722
	n	108	99	103
Limited access to emotion regulation strategies	r	-.115	.079	-.012
	p	.237	.438	.902
	n	108	99	103
Lack of emotional clarity	r	.048	.074	-.027
	p	.620	.465	.786
	n	108	99	103

Table 5 shows the Pearson correlation coefficient between various dimensions of emotion regulation difficulties and three demographic variables: age, duration, and age of debut. None of the correlations reached statistical significance at the conventional alpha level of .05 across all scales. Emotional dysregulation exhibited weak positive correlations with both age (r = .132, p = .174) and duration (r = .133, p = .190), and a slight negative correlation with age of debut (r = –.047, p = .637). Similarly, nonacceptance of emotional responses was modestly correlated with age (r = .153, p = .114) and age of debut (r = .133, p = .180), while its association with duration was weaker (r = .081, p = .426).

Difficulty engaging in goal-directed behavior showed negligible correlations with all three variables, with coefficients below .08 and p-values exceeding .46. Impulse control difficulties were slightly associated with duration (r = .149, p = .141), but not with age or age of debut. Limited access to emotion regulation strategies demonstrated the strongest correlation with duration (r = .196, p = .051), which approached statistical significance. Lastly, lack of emotional clarity was not meaningfully correlated with any of the variables, with all coefficients below .02 and p-values above .89. In conclusion, while some dimensions of emotion regulation showed weak associations with age, duration, and age of debut, none of these relationships were statistically significant. The strongest trend emerged between limited access to emotion regulation strategies and duration, suggesting a potential area for further investigation.

Discussion of the Findings

This study examined how socio-demographic factors, including gender, age, education, occupation, and income, influence emotional dysregulation among youth with substance use disorder (SUD) in rehabilitation centers. Results revealed a complex and sometimes contradictory relationship between these factors and emotional regulation outcomes. While some findings aligned with established literature, others diverged, underscoring the contextual nuances of Kenyan rehabilitation settings and the multifactorial nature of emotional regulation in substance-using populations.

The study produced mixed results regarding gender. On one hand, descriptive analyses indicated no significant gender differences in overall emotional dysregulation, contrasting with previous studies that have consistently reported gender-based variations. Research in both Western and African contexts has found that women often demonstrate higher emotional reactivity and greater reliance on maladaptive coping strategies, while men exhibit more externalizing behaviors linked to poor impulse control (Lo et al., 2021; Thompson & Patel, 2023; Njoroge et al., 2024). However, the current findings suggest that in populations with SUD, the neurocognitive and affective impairments caused by chronic substance misuse may override gender-related distinctions, producing a shared vulnerability across sexes. This interpretation aligns with arguments that contend that cultural and structural factors, such as stigma, poverty, and family strain, can level gendered differences in emotional regulation (Ndetei et al., 2013).

From a clinical standpoint, the absence of gender differences in broad patterns of emotional dysregulation suggests that interventions such as Dialectical Behavior Therapy (DBT), which targets core processes of mindfulness, distress tolerance, and emotional regulation, may be broadly effective for both males and females (Linehan, 2014). However, regression analyses within this study revealed that gender did significantly predict access to emotion regulation strategies, with women more likely to report limited access. This finding resonates with research highlighting that women with SUD are disproportionately affected by intersecting vulnerabilities, including trauma exposure, sociocultural expectations, and higher rates of affective comorbidities (Aldao, Nolen-Hoeksema, & Schweizer, 2010; Nolen-Hoeksema, 2012). This suggests that while both genders exhibit high levels of dysregulation, women may encounter greater barriers to employing adaptive coping mechanisms, thereby requiring gender-sensitive adaptations within treatment settings.

Regarding age, the findings revealed no significant association between age and emotional dysregulation, although non-significant trends suggested that younger participants experienced slightly greater difficulties with goal-directed behavior under distress. Existing literature often reports that younger adults demonstrate reduced emotional regulation capacity compared to older adults, probably due to ongoing prefrontal maturation and higher emotional reactivity (Patel et al., 2021). However, chronic substance use may flatten these levels of expected age-related differences by disrupting normative neurodevelopmental trajectories (Daros et al., 2024). This interpretation aligns with the current study, where prolonged exposure to substance misuse may have nullified age-related protective factors, rendering emotional dysregulation a pervasive difficulty across age categories.

Similarly, the analysis of age of onset and duration of substance use revealed no strong predictive power, although weak associations suggested that longer use was linked with difficulty sustaining goal-directed behaviors. These findings align with biosocial models (Linehan, 1993) that emphasize that emotional dysregulation is shaped more by psychological vulnerabilities, trauma history, and social contexts than by demographic markers alone. Clinically, this suggests that while age and use history provides some contextual background, treatment planning should prioritize individualized assessments of coping strategies, trauma, and support networks.

Further, the findings revealed no significant association between education level, occupation, and emotional dysregulation within this rehabilitation sample. This contrasts with previous literature

suggesting that limited formal education predicts poorer emotional regulation skills and higher relapse rates (Malinga & Wassenaar, 2019; Omondi & Wanjiru, 2023; Okech et al., 2023). A possible explanation is that in clinical SUD populations, particularly in rehabilitation settings, the shared severity of substance misuse diminishes the predictive power of educational attainment and occupational status. Once addiction becomes entrenched disrupts emotional, cognitive, and behavioral functioning, and structural markers such as education or employment may exert a weaker influence on coping capacity.

Nonetheless, previous studies underscore the importance of integrating psychoeducation and cognitive-behavioral approaches into rehabilitation (Okech et al., 2023). Although education did not predict outcomes in this study, targeted psychoeducational interventions may still enhance emotional resilience, especially among clients with lower literacy or academic backgrounds. Similarly, while occupation was not a significant predictor here, prior evidence demonstrates that employment opportunities support emotional stability and recovery (Garcia et al., 2023). These inconsistencies highlight the importance of contextual interpretation and caution against universalizing findings across different populations.

Income emerged as a more nuanced predictor of emotional dysregulation. While the overall relationship between income and dysregulation dimensions was weak and often non-significant, the results demonstrated that income was significantly associated with limited access to emotion regulation strategies. Respondents in the Ksh 30,000 – 60,000 range, as well as those with no income, reported elevated difficulties. These findings align with literature linking financial hardship to limited coping resources and stress-related dysregulation (Malinga & Wassenaar, 2019; Lo et al., 2021; Kimani et al., 2023).

Gratz and Roemer's (2004) multidimensional model of emotional dysregulation provides a useful framework here: while some dimensions (e.g., impulse control, clarity of emotions) may be more intrapsychic and less sensitive to socio-economic status, access to strategies is often shaped by systemic inequities. This study resonates with findings from Tull et al. (2019), who noted that lower socio-economic status predicted poorer coping among substance-dependent individuals. In the Kenyan context, where structural inequities affect access to therapy, psychoeducation, and social support, financial instability may disproportionately influence coping-related dimensions of dysregulation. Clinically, these findings underscore the need for rehabilitation centers to integrate

skills-based interventions accessible regardless of financial standing, such as DBT modules and group-based psychoeducation. Theoretically, these results underscore biopsychosocial perspectives, emphasizing the interplay between macrosystemic factors (e.g., income) and individual vulnerabilities in shaping emotional regulation outcomes.

Although not directly tested in this study, findings intersect with broader literature on family background and social support systems. Research consistently highlights that adverse childhood experiences, parental substance use, and weak social networks exacerbate emotional dysregulation and relapse vulnerability (Harper et al., 2023; Fox et al., 2022; Waithaka et al., 2024). Similarly, peer support has been shown to enhance emotional resilience and treatment adherence in Kenyan contexts (Otieno et al., 2024; Mwangi et al., 2024). The current findings, showing widespread dysregulation regardless of demographic markers, may in part reflect the compounded impact of childhood adversity and stigma across genders and socioeconomic statuses. Cultural beliefs and stigma, as emphasized by Patel et al. (2023) and Achieng et al. (2024), also likely shape treatment engagement, underscoring the need for culturally adapted, trauma-informed interventions in Kenyan rehabilitation centers.

The findings present several important implications. First, they suggest that while socio-demographic factors such as age, education, and occupation may not strongly predict emotional dysregulation within clinical SUD populations, gender and income remain salient predictors of access to coping strategies. This highlights the need for gender-sensitive programs and systemic interventions that mitigate financial barriers. Second, the results reinforce the universality of emotional dysregulation as a transdiagnostic factor in addiction, consistent with affect regulation models of substance use (Aldao et al., 2022). Finally, the findings underscore the contextual importance of sociocultural and structural factors in Kenya, suggesting that effective treatment must combine evidence-based interventions such as DBT with trauma-informed care, financial empowerment initiatives, and culturally sensitive psychoeducation.

CONCLUSION

The study concludes that emotional dysregulation is highly prevalent among youth with substance use disorder, a critical role in shaping vulnerability and recovery outcomes. Factors such as age, gender, education level, family structure, and social support significantly influence how young people experience, express, and regulate emotions, thereby affecting their susceptibility to relapse.

The findings affirm that focusing solely on detoxification and behavioral therapy, while neglecting emotional regulation, leaves a critical treatment gap. Incorporating structured, evidence-based approaches such as Dialectical Behavior Therapy (DBT) provides a viable pathway to address both emotional and social dimensions of addiction. By tailoring interventions to the socio-demographic realities of Kenyan youth, rehabilitation centres can enhance resilience, reduce cravings, and improve long-term recovery. These insights are vital for guiding policy, clinical practice, and future research in substance use rehabilitation.

RECOMMENDATIONS

Based on the findings of this study, several recommendations are proposed to strengthen rehabilitation approaches for youth with Substance Use Disorder (SUD). At the policy level, stakeholders should integrate Dialectical Behavior Therapy (DBT) into national treatment guidelines to address emotional dysregulation alongside detoxification and counseling. Greater investment is needed in training mental health professionals, particularly in DBT delivery, to bridge the current shortage of skilled personnel. Treatment centres should also adopt multidimensional treatment models that combine mindfulness, distress tolerance, emotion regulation, and interpersonal effectiveness, ensuring that interventions are responsive to age, gender, and socio-economic differences. Routine screening for emotional dysregulation using standardized tools such as the DERS-16 can further enhance individualized care.

At the community level, stigma reduction campaigns are essential for encouraging youth to seek treatment without fear of discrimination. Family involvement in therapy should be strengthened, as supportive relationships play a crucial role in sustaining recovery. Faith-based and educational institutions should also collaborate to promote preventive strategies that equip young people with healthy coping mechanisms before substance use escalates. Finally, future research should focus on adapting DBT to Kenyan cultural contexts and evaluating its long-term impact across diverse socio-demographic groups.

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