



Moderating role of emotion regulation in the relationship between perceived stress and alcohol use among Nigerian adults

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Received: 01 March 2025. Revised: 28 June 2025. Accepted: 08 July 2025.

ARTICLE INFO

Keywords:

Adulthood,
alcoholism,
cognition,
emotion regulation,
stress.

ABSTRACT

Alcohol use is a significant public health concern globally, with Nigeria experiencing increasing rates of consumption and related health consequences. Stress has been identified as a major risk factor for alcohol use, yet not all individuals experiencing stress resort to alcohol, suggesting the presence of moderating psychological factors such as emotion regulation strategies. This study examined the moderating role of emotion regulation strategies (cognitive reappraisal and expressive suppression) in the relationship between perceived stress and alcohol use among Nigerian adults. Participants ($N = 331$) were drawn from Nsukka, Enugu State, Nigeria. They completed standardized self-report measures, including the Alcohol Use Disorder Identification Test (AUDIT), Perceived Stress Scale (PSS), and Emotion Regulation Questionnaire (ERQ). Data was analyzed using the Hayes' PROCESS macro for SPSS. Moderation analyses showed that cognitive reappraisal significantly weakened the relationship between perceived stress and alcohol use ($B = -.38, p < .001$). Similarly, expressive suppression moderated this relationship, albeit with a slightly weaker effect ($B = -.38, p < .001$). Gender was also a significant predictor, with men reporting higher alcohol use than women ($B = 1.21, p < .001$). Emotion regulation strategies play a critical role in mitigating stress-induced alcohol use. These findings underscore the need for targeted interventions promoting adaptive emotion regulation strategies to reduce alcohol misuse in the Nigerian population.

Introduction

Alcohol use and misuse have become significant public health concerns worldwide. The harmful consumption of alcohol contributes to the global burden of disease, leading to both short-term and long-term health consequences. Nigeria, like many other countries, faces rising rates of alcohol consumption, with severe implications for public health and socio-economic development. According to World Health Organisation (WHO, 2024), alcohol consumption led to an estimated 2.6 million deaths globally in 2019 alone. This includes 1.6 million fatalities from noncommunicable diseases, 700,000 from injuries, and 300,000 from communicable diseases. Men were disproportionately affected, accounting for 2 million of these deaths, while women accounted for 600,000. Approximately 400 million individuals worldwide, representing 7% of the global population aged 15 and above, suffer from alcohol use disorders, with 209 million (3.7% of adults) specifically experiencing alcohol dependence (WHO, 2024). Alcohol misuse significantly contributes to the risk of chronic diseases such as liver cirrhosis, cardiovascular diseases, and cancers, making it a critical issue for public health (Adias et al., 2013).

In Nigeria, alcohol consumption is increasing at an alarming rate. A systematic review and meta-analysis revealed that the pooled crude prevalence of harmful alcohol use in Nigeria among adults stands at 34.3%, with men exhibiting higher rates (43.9%) compared to women (23.9%) (Adeloye et al., 2019). Studies indicate that 31.1% of university students report current alcohol use, with psychological factors such as depression and low self-efficacy being linked to increased consumption (Ajayi et al., 2019; Asagba et al., 2021). Additionally, underage drinking is a growing problem, with many secondary school students initiating alcohol use early, primarily consuming beer and local spirits (Eze et al., 2017). This alarming rate is attributable to the fact that in Nigeria, the cultural and social acceptance of alcohol, coupled with limited regulatory enforcement, exacerbates the challenge of curbing harmful use.

Alcohol consumption is deeply embedded in various Nigerian cultural practices and ceremonies, such as traditional festivals and social gatherings, where it is often used as a symbol of hospitality and celebration (Dumbili, 2024; Nwosu et al., 2022). This cultural integration of alcohol makes it challenging to address

harmful drinking behaviours. Regulatory efforts to control alcohol misuse face significant obstacles. Studies have identified gaps in the enforcement of existing alcohol regulations, including insufficient labeling requirements and the absence of mandatory health warnings on alcoholic beverages (Odeigahet al., 2021). Additionally, there is a notable lack of awareness among law enforcement agents regarding drink-driving laws and appropriate penalties, further hindering effective regulation (Oginni et al., 2021).

Furthermore, alcohol -related road accidents remain a serious issue, particularly among commercial drivers in Nigeria. A study in Calabar, Nigeria, found that 84.4% of commercial vehicle drivers consume alcohol, with a quarter classified as hazardous drinkers (Bello et al., 2011). The economic and social consequences of alcohol use are also profound. Many alcohol consumers in Nigeria report absenteeism, reduced productivity, and engagement in risky behaviours such as unprotected sex and substance abuse (Dimah & Gire, 2004).

Beyond the direct economic and social effects of alcohol use, psychological factors such as stress play a crucial role in influencing drinking behaviours. Perceived stress, defined as the degree to which situations are appraised as stressful, in particular, has been widely recognized as a significant risk factor for various maladaptive behaviours, including alcohol use (Cohen et al., 1983; Keyes et al., 2011). In contemporary societies, stress has become a pervasive challenge, significantly affecting individuals' psychological well-being, social functioning, and health outcomes. The experience of stress is inevitable in daily life, and individuals differ in how they manage and respond to stressors. While some people adopt adaptive coping mechanisms, others may resort to alcohol consumption as a form of self-medication or escape (Taylor & Stanton, 2007). In Nigeria, where socio-economic instability, job insecurity, financial stress, and other environmental stressors are prevalent, stress-related coping mechanisms, including alcohol use, have become a pressing concern (Ugwu et al., 2024). Individuals experiencing high levels of perceived stress often turn to alcohol as a coping mechanism, which can lead to a vicious cycle of increased alcohol consumption and further stress (Koob & Volkow, 2016). This ultimately leads to more significant problems, including dependency and health issues (Grigsby et al., 2023; Liu et al., 2023).

Despite this well-documented relationship, not everyone who experiences high levels of stress resorts to alcohol use, highlighting the moderating influence of other psychological factors, such as emotion regulation strategies. Emotion regulation, which refers to the processes through which individuals manage and respond to their emotional experiences, plays a critical role in determining whether stress leads to maladaptive behaviours such as excessive alcohol consumption (Gross, 1998). Among the various emotion regulation strategies, cognitive reappraisal and expressive suppression have gained prominence in psychological research (Garg et al., 2023). This study, therefore, explores the moderating effects of emotion regulation strategies on the relationship between perceived stress and alcohol use among adults in Nigeria.

Perceived Stress and Alcohol Use

Perceived stress is a significant predictor of alcohol use, as individuals often turn to alcohol as a coping mechanism to manage their stress (Koob & Volkow, 2016). This relationship has been documented in various studies, highlighting the role of stress in promoting alcohol consumption. For instance, a study by Etim and Peter (2023) found that perceived stress was positively associated with alcohol use among youths in Ibadan, Nigeria. The authors suggested that economic and social pressures contribute to high levels of stress, which in turn lead to increased alcohol consumption. Similarly, a cross-sectional study by Gavurova et al. (2020) demonstrated that higher levels of perceived stress were associated with increased alcohol use, particularly among individuals with limited coping resources.

Alcohol use as a prevalent behaviour among adults in Nigeria, is often influenced by various stressors such as economic instability, social pressures, and personal challenges. Economic instability, characterized by factors like poverty and unemployment, has been linked to increased alcohol consumption as individuals may use alcohol as a coping mechanism (Juma et al., 2020). Social pressures also play a significant role; studies have shown that male friends or acquaintances often encourage individuals to drink or consume more alcohol than intended, contributing to higher consumption rates (Gureje et al., 2007). Additionally, personal challenges, including mental health issues arising from civil conflicts and political instability, can lead to increased alcohol use as a form of self-medication (Juma et al., 2020).

The use of alcohol to cope with stress can lead to a vicious cycle, where alcohol use temporarily alleviates stress but ultimately leads to more significant problems, including dependency and health issues (Vornlocher & Shiota, 2024). This cycle is particularly evident in Nigeria, where economic and social pressures contribute to high levels of stress and subsequent alcohol consumption (Adewuya et al., 2020). The negative consequences of alcohol misuse are well-documented, including liver disease, mental health issues, and social problems (World Health Organization, 2021). Therefore, understanding the mechanisms underlying the relationship between stress and alcohol use is crucial for developing effective interventions to mitigate the negative consequences of alcohol misuse.

Emotion Regulation and Alcohol Use

Emotion regulation (ER) refers to the processes by which individuals influence their emotional experiences and expressions (Gross, 1998). Two commonly studied strategies within the broader domain of emotion regulation are cognitive reappraisal and expressive suppression. Cognitive reappraisal involves reinterpreting a situation to change its emotional impact, typically before an emotional response fully develops (Gross, 1998). In contrast, expressive suppression occurs after an emotional response has been triggered and focuses on inhibiting the outward display of

emotions (Gross, 1998). Both strategies have been shown to have varying effects on emotional experiences and behaviours.

Cognitive reappraisal is a proactive strategy that involves changing the way one thinks about a situation to alter its emotional impact (Gross, 1998). This strategy has been shown to be effective in reducing the intensity of emotional experiences and their outward expressions (Gross, 1998). By reframing stressful situations in a more positive light, individuals can manage their stress without resorting to alcohol (Liu et al., 2023). Previous research has demonstrated that cognitive reappraisal is associated with lower levels of alcohol use, suggesting that it may serve as a protective factor against alcohol misuse. For example, a study by Teeters et al. (2022) found that higher levels of cognitive reappraisal were associated with lower levels of alcohol use among adults, indicating that this strategy can help individuals manage stress more effectively.

Expressive suppression is a reactive strategy that involves inhibiting the outward display of emotions after they have been triggered (Gross, 1998). While this strategy is often considered less effective than cognitive reappraisal, it has been shown to reduce negative emotions under certain conditions (Rydzewska et al., 2023). By suppressing the expression of negative emotions, individuals may be able to manage their stress and avoid turning to alcohol (Jones et al., 2024). However, the effectiveness of expressive suppression in reducing alcohol use is less clear, with some studies suggesting that it may have limited benefits (Jones et al., 2024). For instance, a study by Jones et al. (2024) found that expressive suppression was less effective in reducing negative emotions compared to cognitive reappraisal, but it still had some benefits in certain contexts.

Moderating Role of Emotion Regulation

Recent research has suggested that emotion regulation strategies may moderate the relationship between perceived stress and alcohol use. Specifically, cognitive reappraisal and expressive suppression have been identified as potential moderators that could influence this relationship. Studies have shown that emotion regulation difficulties are associated with problematic alcohol use and coping mechanisms (Simonič et al., 2024). Cognitive reappraisal has been shown to be effective in reducing the intensity of emotional experiences and their outward expressions, which may help individuals manage stress without resorting to alcohol (Holzhauer et al., 2021). On the other hand, expressive suppression, while often considered less effective, has also been found to reduce negative emotions under certain conditions, although its relationship with alcohol use is more complex (Rydzewska et al., 2023). This suggests that both strategies could play a role in mitigating the impact of stress on alcohol use.

Purpose and Hypotheses

The current study aims to investigate the moderating role of emotion regulation strategies, specifically cognitive reappraisal and expressive suppression, in the relationship between perceived stress and alcohol use among adults in Nigeria. While numerous studies have established perceived stress as a predictor of alcohol use (James et al., 2017; Keyes et al., 2012), there is a lack of research examining how emotion regulation moderates this relationship especially in Nigerian populations. Most existing studies have been conducted in Western societies, where social structures, cultural attitudes toward alcohol, and coping mechanisms differ significantly from those in Nigeria (Dumbili & Onyima, 2018; Gureje et al., 2010). This creates a knowledge gap regarding the specific psychological mechanisms that influence alcohol use behaviours in Nigeria. Studies have shown that cognitive reappraisal is generally protective against alcohol misuse, whereas expressive suppression has mixed effects (Christ et al., 2022; Kirwan et al., 2022; Teeters et al., 2022).

However, it remains unclear whether these findings hold true in Nigeria, where socio-economic stressors and coping mechanisms may differ. Nigerian society, like many collectivist cultures, places a strong emphasis on social harmony, respect for authority, and emotional restraint, which can encourage the use of expressive suppression as a dominant emotion regulation strategy. Since emotional suppression is deeply embedded in Nigerian culture, it is likely that individuals experiencing high levels of stress may rely more on suppression rather than healthier coping strategies, such as cognitive reappraisal. This makes examining the role of expressive suppression in stress-induced alcohol use particularly relevant in Nigeria. Understanding these mechanisms can inform the development of targeted interventions aimed at reducing alcohol misuse and promoting healthier coping strategies among adults in Nigeria.

We hypothesize that: (1) Perceived stress will be positively associated with alcohol use. (2) Emotion regulations (cognitive reappraisal and expressive suppression) strategies will be negatively associated with alcohol use. (3) Cognitive reappraisal will moderate the relationship between perceived stress and alcohol use, such that higher levels of cognitive reappraisal will be associated with a weaker relationship between stress and alcohol use. (4) Expressive suppression will also moderate the relationship between perceived stress and alcohol use, with higher levels of suppression leading to a weaker relationship between stress and alcohol use.

Method

Participants and procedure

A sample of 331 adults from Nsukka, Enugu State, participated in the present study. The sample comprised 176 men (53.2%) and 155 women (46.8%). The participants had an average age of 42.42 years ($SD = 2.65$, range = 19–66 years). Their marital status, coded 1–3, was as follows: single ($n = 96$, 29.0%), married

($n = 196$, 59.2%), and divorced ($n = 39$, 11.8%). Additional demographic details can be found in Table 1.

The paper-and-pencil questionnaire was distributed to willing participants by two researchers who had adequate training on how to administer the questionnaires. Informed consent was obtained from all participants before they took part in the study. Participation was completely anonymous, as participants were not required to provide any identifying information. The questionnaire included the following measures in this order: demographic information, Alcohol Use Disorder Identification Test, Perceived Stress Scale, and Emotion Regulation Questionnaire. The order of the questions was not randomized, as no ordering bias was anticipated at the time of administration. Participants who were unwilling to participate were not given the questionnaire but were thanked for their time. A total of 350 questionnaires were distributed. Of these, ten were incorrectly completed, four were returned blank, and five were lost, leaving a final sample of 331 valid responses. Participants reported no difficulties in completing the questionnaires.

Instruments

Alcohol use was assessed using the Alcohol Use Disorder Identification Test (AUDIT; World Health Organization, 1988). The AUDIT consists of 10 items, each scored on a 5-point scale. An example item is: *"How often do you have five or more drinks on one occasion?"* Scores are calculated by summing responses across all items. Higher scores indicate hazardous drinking or alcohol dependence, while lower scores indicate low risk drinking. Thomas and Magaret (1999) reported Cronbach's alpha of 0.94 for the entire scale. The internal consistency reliability for the present study was acceptable (Cronbach's alpha = .90).

Perceived stress was assessed using the Perceived Stress Scale (PSS; Cohen et al., 1983), a widely used measure of stress perception. The PSS consists of 10 items scored on a 5-point Likert scale (0 = never, 1 = almost never, 2 = sometimes, 3 = fairly often, 4 = very often). Example items include: *"How often have you been upset because of something that happened unexpectedly?"* and *"How often have you felt that you were unable to control the important things in your life?"*. The PSS is designed to measure the extent to which situations in one's life are appraised as stressful. Scores are obtained by reversing the responses to the four positively stated items and summing across all items. Higher scores indicate greater perceived stress, while lower scores indicate lower stress. Cohen et al. (1983) reported Cronbach's alpha of 0.84 for the scale. In the present study, a Cronbach's alpha of .79 was obtained.

The Emotion Regulation Questionnaire (ERQ; Gross & John, 2011) is a 10-item self-report measure assessing the habitual use of two emotion regulation strategies: cognitive reappraisal and expressive suppression. Example items include Cognitive reappraisal: *"When I'm faced with a stressful situation, I make myself think about it in a way that makes me stay calm."* Expressive suppression: *"When I am feeling negative emotions, I make sure not to express them."* Items are scored on a 7-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (7). Higher scores indicate a greater use of the

respective emotion regulation strategy, while lower scores indicate less frequent use. Gross and John (2011) reported Cronbach's α of .75 for the cognitive reappraisal subscale and .76 for the expressive suppression subscale. Aliche et al. (2016) reported internal consistencies of .89 for cognitive reappraisal and .82 for expressive suppression in a Nigerian sample. In the present study, Cronbach's α values of .78 and .80 were obtained for the cognitive reappraisal and expressive suppression subscales, respectively.

Statistical analysis

Pearson's correlation was used to examine the associations of the demographic factors and all the major variables in the study. Hayes (2022) PROCESS macro for SPSS was used to test the hypotheses.

Results

Table 2 shows the correlations among demographic and study variables. Gender was positively correlated with perceived stress and alcohol use, suggesting that males consume more alcohol than females. Perceived stress had a strong positive correlation with alcohol use. Cognitive reappraisal was positively correlated with expressive suppression and negatively correlated with alcohol use. Lastly, expressive suppression was negatively correlated with alcohol use.

The regression coefficient table (Table 3) showed that when cognitive reappraisal was the moderator, perceived stress positively predicted alcohol use. Additionally, cognitive reappraisal had a significant negative effect on alcohol use, indicating that individuals who engaged in cognitive reappraisal consumed less alcohol. The interaction between perceived stress and cognitive reappraisal was significant, suggesting that cognitive reappraisal weakens the positive relationship between perceived stress and alcohol use. Gender, included as a covariate, was a significant predictor of alcohol use indicating that men were more likely to consume alcohol. Figure 1 showed that although the association between perceived stress and alcohol use was significant across all levels of cognitive reappraisal, it was more robust for those with low cognitive reappraisal ($B = 3.87$, $t = 41.83$, $p < .001$) and at moderate cognitive reappraisal ($B = 2.84$, $t = 45.98$, $p < .001$) compared to those who had high cognitive reappraisal ($B = 1.52$, $t = 17.03$, $p < .001$).

When expressive suppression was the moderator, perceived stress again positively predicted alcohol use. Expressive suppression had a significant negative effect on alcohol use, suggesting that individuals who suppressed their emotional expressions consumed less alcohol. The interaction between perceived stress and expressive suppression was also significant, indicating that expressive suppression reduced the strength of the relationship between perceived stress and alcohol use. Gender remained a significant predictor of alcohol use. Figure 2 showed that although the association between perceived stress and alcohol use was significant across all levels of expressive suppression, it was strongest for those with low expressive suppression ($B = 3.85$, $t = 38.91$, $p < .001$) and at moderate expressive suppression ($B = 2.89$, $t = 43.02$, $p < .001$) compared to those who had high expressive suppression ($B = 1.51$, $t = 15.45$, $p < .001$).

Table 1. *Demographics and characteristics of the study population.*

Variables	Frequency	Percentage
Sample Size	331	
Age (in years)	19 -66	
Mean age	42.42	
Gender		
Male	176	53.2%
Female	155	46.8%
Religion		
Christianity	286	86.4%
Islam	37	11.2%
ATR	1	.3%
Others	7	2.1%
Maritalstatus		
single	96	29.0%
married	196	59.2%
divorced	39	11.8%
Occupation		
student	54	16.3%
employed	117	35.3%
unemployed	12	3.6%
self-employed	112	33.8%
retired	36	10.9%
Ethnicity		
Igbo	144	72.0%

Note: ATR = African Traditional Religion

Discussion

The present study examined the moderating role of emotion regulation strategies, specifically cognitive reappraisal and expressive suppression, in the relationship between perceived stress and alcohol use among adults in Nigeria. The findings supported all four hypotheses, underscoring the significance of stress as a predictor of alcohol use and the protective role of emotion regulation strategies. Consistent with our first hypothesis, perceived stress was found to be positively associated with alcohol use. This finding aligns with previous studies demonstrating that individuals experiencing high levels of stress are more likely to engage in alcohol consumption as a coping mechanism (Koob & Volkow, 2016; Etim & Peter, 2023). The self-medication hypothesis (Khantzian, 1997) provides a theoretical explanation for this relationship, suggesting that individuals may use alcohol to alleviate psychological distress. In Nigeria, economic instability, social pressures, and environmental stressors contribute to heightened stress levels (Ugwu et al., 2024), further reinforcing alcohol consumption as a maladaptive coping strategy. Additionally, the stress-response dampening model (Sher & Levenson, 1982) posits that alcohol may reduce the physiological and psychological effects of stress, explaining its appeal among stressed individuals. These findings highlight the importance of addressing stress-related alcohol use in intervention efforts, particularly in socio-economically vulnerable populations.

Our second hypothesis, that cognitive reappraisal and expressive suppression would be negatively associated with alcohol use, was also supported. Individuals who employed these strategies consumed less alcohol, consistent with previous research indicating that adaptive emotion regulation is linked to reduced substance use (Aldao & Nolen-Hoeksema, 2010; Liu et al., 2023). Cognitive reappraisal, which involves reframing stressful situations to alter their emotional impact (Gross, 1998), has been found to reduce negative effects and promote adaptive coping mechanisms (Gross & John, 2003). This suggests that

Table 2: *Correlations of demographic and study variables*

Variables	1	2	3	4	5
1. Age	-				
2. Gender	.01	-			
3. Perceived stress	.07	.35**	-		
4. Cognitive reappraisal	-.05	-.01	-.09	-	
5. Expressive suppression	-.05	-.01	-.09	.99**	-
6. Alcohol use	.09	.30**	.73**	-.64**	-.63**

Table 3: Hayes PROCESS macro results for perceived stress predicting alcohol use with emotion regulation (cognitive reappraisal and expressive suppression) as a moderator.

Variables	B	SE	t	p-level	LLCI	ULCI	R ²	F
PStress	12.28	.56	22.03	.000	11.18	13.38	.94	1174.71 (4, 326)***
CoA	-.28	.11	-2.61	.009	-0.5	-.07		
PStress x CoA	-.38	.02	-17.36	.000	-0.42	-.34		
Gender	1.14	.31	3.68	.000	.53	1.75		
PStress	12.26	.6	20.4	.000	11.08	13.44	.92	996.71 (4, 326)***
ExpS	-.25	.12	-2.16	.031	-.48	-.02		
PStress x ExpS	-.38	.02	-16.07	.000	-.43	-.33		
Gender	1.21	.33	3.61	.000	.55	1.87		

Note: Pstress= Perceived stress; CoA = Cognitive appraisal; ExpS = Expressive suppression.

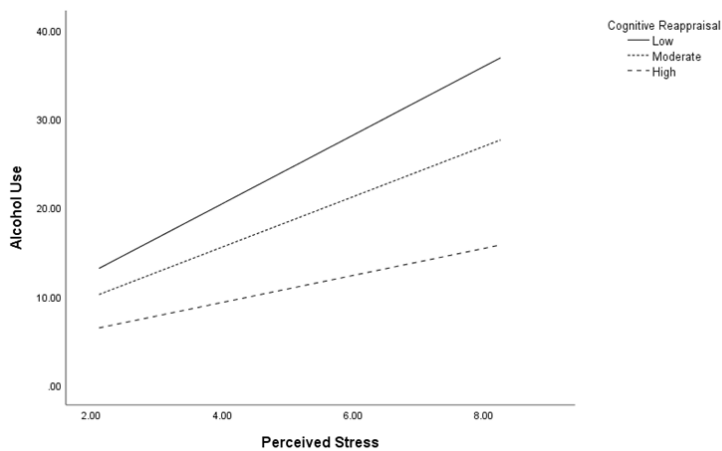


Figure 1. Graphs for moderating role of cognitive reappraisal in the relationship between perceived stress and alcohol use among adults

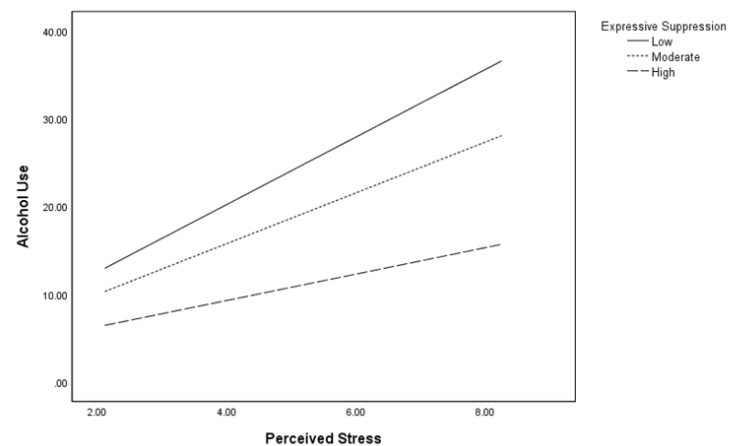


Figure 2. Graphs for moderating role of expressive suppression in the relationship between perceived stress and alcohol use among adults

individuals who frequently use cognitive reappraisal may experience less distress and thus have a lower need to rely on alcohol for emotional relief. Expressive suppression, despite being traditionally viewed as a less effective regulation strategy (Christ et al., 2022), was also associated with lower alcohol use in this study. This finding may be explained by cultural factors in Nigeria, where emotional restraint is often encouraged (Dumbili&Uwa-Robinson, 2024). The social norms surrounding emotional expression in collectivist societies may contribute to the observed protective effect of suppression, warranting further investigation into cultural variations in emotion regulation.

Our third hypothesis that cognitive reappraisal would

moderate the relationship between perceived stress and alcohol use, was confirmed. Specifically, individuals with higher levels of cognitive reappraisal exhibited a weaker relationship between stress and alcohol consumption. This finding is consistent with studies suggesting that cognitive reappraisal buffers the negative effects of stress (Liu et al., 2023). The broaden-and-build theory of positive emotions (Fredrickson, 2001) provides a possible explanation, proposing that adaptive coping strategies enhance psychological resilience and reduce reliance on maladaptive behaviors like alcohol use. These findings emphasize the potential of cognitive reappraisal training in alcohol prevention programs. By equipping individuals with skills to reinterpret stressors in a constructive manner,

interventions may effectively reduce alcohol misuse in high-stress environments.

Finally, our fourth hypothesis, that expressive suppression would moderate the relationship between perceived stress and alcohol use, was supported. While suppression weakened the stress-alcohol relationship, its effect was less pronounced than that of cognitive reappraisal. This aligns with mixed findings in the literature, where some studies report beneficial effects of suppression under certain conditions, while others indicate negative consequences (Gross, 1998; Rydzewska et al., 2023). In the Nigerian context, where emotional suppression is culturally reinforced, this strategy may serve as a socially accepted method of managing stress, reducing the immediate need for alcohol consumption. However, research suggests that chronic reliance on suppression can have long-term psychological costs, including increased physiological stress and emotional dysregulation (Gross & John, 2003). These findings suggest that while suppression may be useful in the short term, promoting cognitive reappraisal as a primary coping mechanism may be a more sustainable approach to mitigating stress-related alcohol use.

The findings of this study have significant implications for public health interventions aimed at reducing alcohol misuse in Nigeria. Given the protective role of cognitive reappraisal, interventions should focus on enhancing individuals' ability to reframe stressors positively. Cognitive-behavioral therapy (CBT) techniques and mindfulness-based interventions may be effective in this regard. Additionally, given the cultural acceptance of expressive suppression, educational programs should raise awareness of both its benefits and potential drawbacks, encouraging a balanced approach to emotion regulation.

This study, while providing valuable insights into the moderating role of emotion regulation strategies in the stress-alcohol relationship among Nigerian adults, has several important limitations that must be acknowledged. The cross-sectional design employed in this research prevents the establishment of causal relationships between perceived stress, emotion regulation strategies, and alcohol use, as all variables were measured at a single point in time. To partially address this limitation, the researchers used established theoretical frameworks such as the self-medication hypothesis and stress-response dampening model to provide theoretical support for the proposed relationships, though longitudinal data would still be needed to confirm temporal causality.

The exclusive reliance on self-report measures presents another significant limitation, as these are susceptible to social desirability bias, recall bias, and potential underreporting of alcohol consumption, particularly given cultural stigma around excessive drinking in Nigerian contexts. The researchers attempted to mitigate this challenge by ensuring complete anonymity of participants, with no identifying information required, and by using validated instruments with established reliability in Nigerian populations. Additionally, the

questionnaires were administered by trained researchers who could clarify any ambiguities, and the study achieved acceptable internal consistency reliability coefficients across all measures (Cronbach's alpha ranging from .78 to .90).

Geographic limitation represents a third concern, as the sample was drawn exclusively from Nsukka, Enugu State, which may limit generalizability to other Nigerian regions with different cultural practices, socioeconomic conditions, and attitudes toward alcohol use. A non-random sample was used, which limits the generalizability of the findings to the broader Nigerian adult population. While this limitation was not fully addressed in the current study, the researchers selected Nsukka as a representative urban-rural mixed community that reflects broader Nigerian demographic characteristics, and they acknowledged this limitation explicitly to guide future multi-regional studies. Fourth, other relevant factors, such as mental health status, trauma history, or coping styles, may confound the relationship between stress and alcohol use but were not controlled for. Fifth, emotion regulation strategies and alcohol use behaviours may be influenced by cultural norms specific to Nigeria, which may limit the applicability of findings to other contexts.

Future research should explore additional moderating factors, such as personality traits and social support, which may further influence the stress-alcohol relationship. Longitudinal studies are also needed to determine the long-term effectiveness of different emotion regulation strategies in preventing alcohol misuse using larger sample size. Moreover, cross-cultural comparisons could provide insights into how societal norms shape the effectiveness of emotion regulation strategies.

Conclusion

In summary, this study highlights the crucial role of emotion regulation in moderating the relationship between perceived stress and alcohol use among adults in Nigeria. Cognitive reappraisal emerged as a particularly effective protective factor, while expressive suppression also played a moderating role, albeit to a lesser extent. These findings underscore the need for targeted interventions that enhance adaptive emotion regulation skills to reduce alcohol misuse in high-stress populations.

Declarations

Data availability statement: The data that support the findings of this study are available from the corresponding author upon reasonable request.

Conflict of Interest/Disclosure statement: K. C. Ayogu, S. I. Ugwu, E. E. Abiama and V. I. Uka declare that they have no conflict of interest.

Informed Consent: All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000 (5). Informed consent was

obtained from all patients for being included in the study.

Funding details: No funding was received by the authors for this study.

Ethical approval: Ethical clearance for the study was granted by the psychology research ethics review committee of the University of Nigeria, Nsukka.

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