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Psychosocial Predictors of Emotion Regulation among Nigerian University Students: Implications for Mental Health Interventions

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ABSTRACT: Emotion regulation (ER) is essential for psychological well-being, yet its psychosocial predictors remain understudied among African university populations. This study examined the social and psychological determinants of ER and the mediating effects of cognitive reappraisal and expressive suppression on the relationship between lifestyle quality and emotional distress among undergraduates in South-West Nigeria. A cross-sectional design was employed involving 1,590 students (M = 20.73, SD = 2.15) who completed the Simple Lifestyle Questionnaire (SLIQ), a single-item Health Status Rating Scale, and the Emotion Regulation Questionnaire (ERQ), alongside measures of stress, anxiety, and depression. Data were analysed using descriptive statistics, Pearson's correlation, multiple regression, and Hayes' PROCESS macro (Model 4) with 5,000 bootstrap resamples. Participants demonstrated moderate ER ability (M = 51.52, SD = 10.81). ER correlated positively with stress ($r = 0.086$, $p < .001$), anxiety ($r = 0.078$, $p < .01$), and depression ($r = 0.067$, $p < .01$). Age ($\beta = –0.33$, $p = .010$) and ethnicity ($\beta = –2.48$, $p = .027$) significantly predicted ER. Expressive suppression, but not cognitive reappraisal, mediated the relationship between lifestyle quality and psychological distress. These findings highlight lifestyle, age, and ethnicity as key factors influencing ER and emphasise the need for culturally sensitive interventions to strengthen adaptive emotional coping among university students.

Keywords: Emotion regulation, Cognitive reappraisal, Expressive suppression, Lifestyle quality, University students

Introduction

Emotion Regulation (ER) refers to the cognitive, behavioural, and physiological processes through which individuals monitor, evaluate, and modify their emotional responses to meet personal and social goals. It is fundamental to adaptive functioning, influencing how emotions shape thoughts, behaviours, and relationships (Gross, 2015). People regulate emotions to align affective states with goal-directed behaviour (Paz, 2018; Fishbach & Ferguson, 2007). When these processes fail (resulting in emotions that are intense, prolonged, or inappropriate) they may undermine psychological stability, disrupt interpersonal functioning, and impair performance across academic, occupational, and social domains (Easdale-Cheele *et al*., 2024; Moyal *et al*., 2013).

Empirical evidence consistently highlights ER as a cornerstone of mental health and resilience. Dysregulated emotion processes are associated with mood and anxiety disorders, particularly among young adults (Ruan *et al*., 2023; de Girolamo *et al*., 2012). Conversely, effective ER has been linked to reduced suicidal ideation and behaviour (Colmenero-Navarrete *et al*., 2022; Barr *et al*., 2017; Pisani *et al*., 2013), lower substance use (Stellen *et al*., 2023), and diminished negative smoking expectancies (Dir *et al*., 2016). ER is increasingly recognized as a transdiagnostic mechanism involved in the onset and persistence of multiple psychopathologies (Rodrigues & Machado, 2025; Karam *et al*., 2023; Sloan *et al*., 2017). Adaptive ER strategies such as cognitive reappraisal serve protective functions, whereas maladaptive patterns like expressive suppression heighten vulnerability to emotional distress.

The regulation of emotion is influenced by a complex interplay of psychosocial and intrapersonal factors. Lifestyle choices, social environments, and perceived health status shape how individuals experience and

express emotions, while psychological burdens such as stress, anxiety, and depression often constrain adaptive regulation. Persistent distress can diminish the use of constructive strategies like cognitive reappraisal, leading to habitual reliance on suppression and other maladaptive responses (Riepenhausen *et al*., 2022). Understanding these psychosocial determinants of ER provides valuable insight into how contextual and psychological variables jointly influence emotional adjustment and mental health outcomes.

Within Nigerian universities, students face unique stressors, including academic pressure, economic instability, and transitional social roles, which challenge emotional resilience. Despite growing attention to youth mental health across sub-Saharan Africa, empirical research on the psychosocial predictors of ER remains scarce. The present study therefore examined how lifestyle quality, perceived health, and psychological distress (stress, anxiety, and depression) predict ER among undergraduates in a Nigerian university. It further explored the mediating roles of cognitive reappraisal and expressive suppression in the relationship between lifestyle quality and emotional distress, thereby illuminating how psychosocial factors interact to shape emotion regulation processes in emerging adulthood.

Materials and methods

Designs: The study employed a quantitative, cross-sectional survey design aimed at exploring psychosocial predictors and mediating mechanisms of emotion regulation among Nigerian undergraduates.

Setting and demography: The study was conducted at a public university in South-West Nigeria. A total of 1,590 undergraduate students participated in the study. They were recruited from various colleges the university. Stratified random sampling was employed to ensure representation across gender, academic level, and field of study. Eligibility criteria included being a full-time undergraduate aged between 18 and 34 years, able to read and understand English, and willing to provide informed consent. Participants provided information on age, sex, ethnicity, marital status, family type, and family dynamics using a brief demographic form. These variables were treated as categorical covariates in the statistical analyses. The study protocol (TETFUND/TASUED/IBR2024) had approval by the Research Ethics Committee of Tai Solarin University of Education. Permission for data collection was obtained from College deans and course coordinators. The study was conducted over a 3-month period (February to May) in 2025 during scheduled lecture hours. After obtaining informed consent, participants completed the anonymous questionnaires in classroom settings under supervision of trained research assistants. Participation was voluntary, and respondents were assured of confidentiality and the right to withdraw at any time.

Measures

Simple lifestyle questionnaire (SLQ): Lifestyle behaviors were measured using the simple lifestyle questionnaire, a brief self-report tool that evaluates routine health-related habits including diet, physical activity, smoking, and alcohol use. Items were scored on a 10-point scale, with higher scores indicating healthier lifestyle practices. The SLQ has been used in prior public health studies in Nigerian populations and demonstrated good internal consistency in the current sample (Cronbach's $\alpha = 0.79$).

One-item quality of life health rating: Overall health status was assessed using a single-item Quality of Life (QoL) measure, which asked participants: *"How would you rate your current health status?"* Responses were rated on a four-point scale: *Very good, Good, Poor,* and *Very poor*. This item served as a categorical variable in subsequent analyses and has been validated in population health surveys as a reliable global indicator of self-perceived well-being.

Emotion regulation questionnaire (ERQ): The ERQ (Gross & John, 2003) was used to assess participants' emotion regulation strategies. It consists of 10 items measuring two key dimensions: cognitive reappraisal (six items) and expressive suppression (four items). Each item is rated on a 7-point Likert scale ranging from *1 (strongly disagree)* to *7 (strongly agree)*. Higher scores indicate greater use of the corresponding emotion regulation strategy. In this study, Cronbach's α values were 0.81 for emotion regulation total, 0.78 for cognitive reappraisal and 0.74 for expressive suppression.

Depression anxiety stress scales (DASS-21): Symptoms of psychological distress were assessed using the DASS-21 (Lovibond & Lovibond, 1995). This 21-item instrument comprises three subscales - Depression, Anxiety, and Stress- each containing seven items rated on a 4-point scale (*0 = did not apply to me at all* to *3 = applied to me most of the time*). Higher scores indicate greater severity of symptoms. Internal consistency for this study was $\alpha = 0.83$ (Depression), 0.84 (Anxiety), and 0.86 (Stress).

Data analysis: Data were analysed using SAS version 9.4 and PROCESS macro version 4.2 (Igartua & Hayes, 2021). Prior to analysis, data were screened for accuracy, missing values, and normality. Outliers were checked using standardized z-scores (±3.29), and no extreme deviations were found. Missing values (<2%) were handled

using series mean imputation since the pattern of missingness was random and minimal. Descriptive statistics (means, standard deviations, medians, and ranges) were computed for all continuous variables, while categorical variables (e.g., sex, ethnicity, family type, health status) were summarized using frequencies and percentages.

To examine the initial relationships among study variables, Pearson product-moment correlation coefficients (r) were calculated between lifestyle (SLQ score), emotion regulation (total, cognitive reappraisal, and expressive suppression), and mental health indicators (stress, anxiety, and depression). This analysis tested the direction and strength of associations to identify potential predictors for inclusion in subsequent regression and mediation models. A multiple linear regression model was employed to determine the combined and unique contributions of lifestyle, psychological distress variables, and demographic factors in predicting emotion regulation (ER total). Predictor variables included lifestyle score, age, stress, anxiety, depression, family dynamics, family type, sex, ethnicity, marital status, and self-rated health status. The model used the enter method, and diagnostic tests were performed to ensure that assumptions of linearity, independence, homoscedasticity, and multicollinearity were not violated. Variance Inflation Factors (VIF) were all below 2.5, indicating no collinearity concerns. Model fit was assessed using the F-test for overall significance, and standardized coefficients (β) were interpreted for predictor strength.

To explore the potential indirect pathways through which lifestyle influences psychological outcomes, mediation analyses were conducted using the PROCESS macro (Model 4). The models tested whether emotion regulation and its components (cognitive reappraisal and expressive suppression) mediated the effects of lifestyle (SLQ) on each mental distress outcome (stress, anxiety, and depression). Each mediation analysis estimated three effects:

1. The a-path, representing the effect of lifestyle on the mediator (ER, CR, or ES).
2. The b-path, representing the effect of the mediator on the outcome (e.g., depression).
3. The c′-path, representing the direct effect of lifestyle on the outcome when controlling for the mediator.

The indirect effect (a × b) was tested using bias-corrected bootstrapped confidence intervals (5,000 samples). An indirect effect was considered statistically significant if the 95% confidence interval did not include zero.

Results

A total of 1,590 undergraduate students participated in the study (Mean (M) age = 20.73 years, SD = 2.15), comprising 1,010 females (63.52%). The majority of participants were single (93.4%), of Yoruba ethnic origin (87.4%), from nuclear families (86.2%), and reported peaceful family dynamics (97.6%). Regarding self-rated health status, 27.6% described their health as very good, 43.2% as good, 21.4% as poor, and 7.8% as very poor. Overall, participants exhibited moderate levels of emotion regulation (M = 51.52, SD = 10.81). Mean scores for other psychological variables also reflected moderate levels of stress (M = 18.67, SD = 5.39), anxiety (M = 13.92, SD = 4.87), and depression (M = 12.44, SD = 4.35). The descriptive statistics and reliability coefficients for the main study variables are presented in Table 1.

Table 1: *Descriptive statistics and reliability coefficients for study variables (N = 1,590)*

Variable	Mean (M)	SD	α	Range
Emotion Regulation (Total)	51.52	10.81	.81	10–70
Cognitive Reappraisal	27.48	6.14	.78	6–42
Expressive Suppression	24.04	5.71	.74	4–28
Stress	18.67	5.39	.86	0–42
Anxiety	13.92	4.87	.84	0–42
Depression	12.44	4.35	.83	0–42
Lifestyle Quality	5.28	1.68	.79	1–10

Pearson's correlation analyses were conducted to examine the bivariate relationships among key study variables. As shown in Table 2, emotion regulation was positively correlated with stress ($r = .086$, $p < .001$), anxiety ($r = .078$, $p < .01$), and depression ($r = .067$, $p < .01$), indicating that students experiencing greater distress tended to engage more frequently in emotion regulation efforts. Lifestyle quality showed weak but negative correlations with stress ($r = –.048$, $p < .05$) and anxiety ($r = –.052$, $p < .05$), suggesting that healthier lifestyles were associated with slightly lower emotional distress.

Table 2: Pearson's correlations among key study variables

Variable	1	2	3	4	5	6	7
1. Emotion regulation	—						
2. Cognitive reappraisal	.72**	—					
3. Expressive suppression	.65**	.48**	—				
4. Stress	.086***	.073**	.059**	—			
5. Anxiety	.078**	.067**	.045*	.64**	—		
6. Depression	.067**	.052*	.038	.59**	.62**	—	
7. Lifestyle quality	–.031	–.029	–.025	–.048*	–.052*	–.043*	—

Note. *p < .05; **p < .01; ***p < .001.

To identify predictors of emotion regulation, a multiple linear regression was performed with age, sex, ethnicity, perceived health status, stress, anxiety, depression, and lifestyle quality as independent variables (Table 3). The overall model was significant, $F(7, 1582) = 6.42$, $p < .001$, explaining 9.4% of the variance in ER ($R^2 = .094$). Age (β = –0.33, $p = .010$) and ethnicity (β = –2.48, $p = .027$) emerged as significant predictors, indicating that younger participants and those from certain ethnic backgrounds reported higher ER scores. Lifestyle quality (β = 0.21, $p = .058$) and perceived health status (β = 0.17, $p = .072$) approached significance, suggesting marginal influence on ER tendencies.

Table 3: Multiple regression predicting emotion regulation

Predictor	B	SE B	B	t	*p*
Constant	42.67	2.34	—	18.23	< .001
Age	–0.33	0.13	–.11	–2.57	.010
Sex	0.94	0.71	.04	1.32	.188
Ethnicity	–2.48	1.12	–.08	–2.20	.027
Perceived Health	0.17	0.09	.06	1.78	.072
Stress	0.19	0.07	.09	2.71	.007
Anxiety	0.14	0.06	.07	2.29	.022
Depression	0.10	0.05	.06	2.01	.045
Lifestyle Quality	0.21	0.11	.06	1.90	.058

Mediation analyses were conducted using Hayes' PROCESS macro (Model 4) with 5,000 bootstrap samples to examine whether cognitive reappraisal and expressive suppression mediated the relationship between lifestyle quality and indicators of emotional distress (stress, anxiety, and depression). The indirect effects revealed that expressive suppression significantly mediated the association between lifestyle quality and each distress variable, while cognitive reappraisal did not. Specifically, lower lifestyle quality predicted greater expressive suppression, which in turn was associated with higher levels of stress (*indirect effect* = 0.036, 95% CI [0.010, 0.081]), anxiety (*indirect effect* = 0.028, 95% CI [0.006, 0.072]), and depression (*indirect effect* = 0.024, 95% CI [0.004, 0.065]). The absence of significant indirect effects for cognitive reappraisal suggests that this strategy did not explain the relationship between lifestyle and psychological distress in this sample.

Figure 1 illustrates the mediation model for expressive suppression as a mediator between lifestyle quality and psychological distress (PD) (stress).

*Indirect effect (a × b) = 0.036**

Note. Paths are standardised coefficients. *p < .05; **p < .01; ***p < .001.

Figure 1: Mediation model showing expressive suppression as a mediator between lifestyle quality and psychological distress (stress, anxiety, and depression). Values shown represent the model for stress; indirect effects for anxiety and depression were 0.028 and 0.024, respectively.

Discussion

This study investigated the psychosocial predictors of emotion regulation (ER) among undergraduates from a public university in the south-west Nigeria, and examined whether cognitive reappraisal and expressive suppression mediated the link between lifestyle quality and emotional distress. The findings revealed that students demonstrated moderate ER ability. Emotion regulation was positively associated with stress, anxiety, and depression, indicating that higher distress was linked to greater engagement in regulation efforts. Regression analysis identified age and ethnicity as significant predictors of ER, suggesting developmental and cultural variations in emotional control. Mediation analysis further showed that expressive suppression, but not cognitive reappraisal, mediated the relationship between lifestyle quality and psychological distress. Collectively, these results suggest that lifestyle experiences influence emotional well-being primarily through suppression-based regulation processes.

The positive association between ER and indices of distress implies that as students experience greater emotional strain, they engage more frequently in attempts to regulate emotions. However, such regulation may not always be adaptive. Previous studies have shown that individuals experiencing anxiety or depressive symptoms often resort to suppression or avoidance rather than constructive strategies (Berking *et al*., 2014; Aldao *et al*., 2010). Thus, the association may reflect increased regulation efforts under distress rather than successful emotion management. This aligns with the view that ER can serve both compensatory and maladaptive functions depending on the strategy employed and the context of regulation (Gross, 2015).

Age negatively predicted ER ability, suggesting that younger students exhibited relatively better emotional control. This could reflect developmental dynamics in which younger undergraduates, who are often transitioning from adolescence, remain more attuned to social expectations around emotional expression (Zimmermann & Iwanski, 2014). Conversely, older students may experience accumulated stressors related to academic and financial responsibilities that tax their regulatory capacity. Interestingly, age, but not gender, had been reported to have major effect on scores for the latent variable of emotion regulation (Sanchis-Sanchis *et al*., 2020). Ethnicity also emerged as a significant predictor, indicating that cultural background shapes emotion regulation tendencies. In collectivist African cultures, suppression of emotion is often encouraged to maintain social harmony and respect for hierarchy (Weiss *et al*., 2022; Ramzan & Amjad, 2017). Therefore, the ethnic differences observed may represent culturally embedded norms regarding emotional restraint and expression.

Although lifestyle quality did not independently predict ER, it influenced psychological distress indirectly through expressive suppression. Students with poorer lifestyle habits—such as inadequate physical activity, poor nutrition, or irregular sleep—may rely more heavily on suppression as a coping mechanism. Suppression, in turn, is associated with higher emotional strain due to the internalisation of unexpressed emotions (Gross & John, 2003). However, within cultural contexts that value composure and social harmony, suppression may serve a dual role, reducing interpersonal conflict while elevating internal distress. The absence of mediation by cognitive reappraisal suggests that students may have limited access to this cognitively demanding and culturally Western-oriented strategy, underscoring the importance of cultural context in shaping regulatory repertoires.

The findings reinforce the psychosocial model of emotion regulation, which posits that social context and individual psychological factors jointly influence regulatory processes. Within Nigerian university settings, emotional self-control and restraint may be seen as virtues rather than maladaptive tendencies, complicating the interpretation of suppression's impact. Thus, theories of ER derived from Western frameworks (e.g., Gross's process model) must be contextualized to reflect cultural values that emphasise social cohesion over individual expression (Butler *et al*., 2007). This highlights the need for culturally sensitive models that account for the social meanings of emotional control in non-Western populations.

These findings have meaningful implications for mental health promotion in African higher education. Since expressive suppression mediates the link between lifestyle and emotional distress, interventions should aim to help students recognise when suppression becomes psychologically costly and to introduce more adaptive alternatives such as cognitive reframing, mindfulness, or stress management techniques. Lifestyle improvement programmes, including exercise promotion, nutrition education, and sleep hygiene, could be integrated with emotional skills training to enhance resilience. Furthermore, recognising the role of cultural norms and ethnic diversity in emotional expression can guide university counseling services in developing culturally responsive interventions tailored to students' backgrounds and values.

Several limitations should be acknowledged in this study. The cross-sectional design prevents causal inference, and the reliance on self-reported measures may introduce bias due to social desirability or inaccurate introspection. The study was also limited to a single institution, which may restrict generalizability to other Nigerian or African university settings. Future research should employ longitudinal or experimental designs to clarify causal pathways, incorporate multi-method assessments (e.g., behavioural or physiological indicators of

ER), and explore cultural narratives around emotional expression through qualitative inquiry. Comparative studies across diverse African regions could further illuminate sociocultural variability in ER mechanisms.
In conclusion, this study underscores that emotion regulation among Nigerian undergraduates is shaped by psychosocial and cultural factors, particularly lifestyle quality, age, and ethnicity. Expressive suppression emerged as the principal mechanism linking lifestyle experiences to emotional distress, highlighting its dual adaptive and maladaptive roles within a collectivist cultural framework. Promoting culturally grounded, lifestyle-informed emotional regulation strategies may strengthen students' psychological resilience and mental health, contributing to more supportive university environments in Nigeria and beyond.

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Conflict of interest

None declared.

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