



MEDIATING ROLES OF COPING STRATEGIES IN THE INFLUENCE OF ADVERSE CHILDHOOD EXPERIENCES ON MENTAL HEALTH AMONG UNDERGRADUATES OF UNIVERSITIES IN TARABA STATE



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Abstract

Adverse Childhood Experiences (ACEs) have been consistently linked to poor mental health outcomes however, the mechanisms through which these experiences influence psychological wellbeing remain insufficiently understood, particularly among university students in Nigeria. This study examined the mediating role of coping strategies in the relationship between ACEs and mental health outcomes, specifically depression, anxiety, and stress, among undergraduate students in Taraba State, Nigeria. A cross-sectional survey design was adopted, and participants were drawn from Taraba State University, Federal University Wukari, and Kwararafa University. Data were collected using standardized instruments, including the Adverse Childhood Experiences Questionnaire (ACE-10), Brief COPE Inventory, Patient Health Questionnaire (PHQ-9), Generalized Anxiety Disorder Scale (GAD-7), and Perceived Stress Scale (PSS-10). Mediation analyses were conducted using Hayes' PROCESS Macro (Version 4.2). The findings revealed that dysfunctional coping significantly mediated the relationship between ACEs and all three mental health outcomes: depression, anxiety, and stress. In contrast, emotion focused coping and problem focused coping did not demonstrate significant mediating effects in any of the models. The study concludes that dysfunctional coping represents an important pathway through which ACEs influence mental health among undergraduates. Consequently, the study recommends that university based mental health interventions should prioritize the identification of students with histories of childhood adversity and focus on reducing maladaptive coping behaviours while strengthening adaptive coping skills.

Keywords: Adverse Childhood Experiences, coping strategies, depression, anxiety, stress, undergraduates, mental health, Nigeria.

Introduction

Mental health problems among young people have become a major public health concern globally, with university students identified as one of the most vulnerable populations. Studies indicate that approximately one third of undergraduate students experience significant symptoms of mental health conditions such as depression, anxiety, or suicidality (Oswalt et al., 2020). According to the World Health Organization (WHO, 2014), mental health refers to a state of wellbeing in which individuals realize their potential, cope effectively with normal life stresses, work productively, and contribute meaningfully to their communities. Mental wellness is therefore fundamental to academic success, personal development, and social functioning (Orok et al., 2023). The burden of mental health problems has increased considerably in recent decades, particularly among individuals aged 15 to 24 years (Basta et al., 2022). Mental disorders impose substantial economic and social costs, estimated at approximately \$2.5 trillion globally in 2010 and projected to exceed \$6 trillion by 2030 (Gustavsson et al., 2011). Among university students, poor mental health has been associated with lower academic performance, reduced productivity, increased dropout rates, and diminished quality of life (Eisenberg et al., 2009). Although students experience a range of psychological difficulties, depression, anxiety, and stress consistently emerge as the most prevalent mental health concerns within this population (Limone & Toto, 2022; Shah & Pol, 2020).

Depression is characterized by persistent feelings of sadness, loss of interest or pleasure, disturbances in appetite and sleep, feelings of worthlessness, impaired concentration, and recurrent thoughts of death or suicide (APA, 2022). Evidence suggests that university students experience higher rates of depression than the general population, with a reported prevalence of approximately 30.6% among university students compared to 21.6% in the wider population (Ibrahim et al., 2013). Untreated depression can have serious consequences, including impaired academic functioning, substance abuse, poor decision making, and suicide attempts (Pacheco et al., 2017; Puthran et al., 2016; WHO, 2017).

Similarly, anxiety represents one of the most common psychological difficulties among university students. Anxiety is defined as a subjective experience of tension, apprehension, and worry accompanied by physiological arousal (Spielberger, 1983, as cited in Brown, 2007). While moderate levels of anxiety may facilitate adaptation and performance, excessive anxiety can interfere with daily functioning and academic achievement (Windarwati et al., 2022). Research has linked anxiety among students to poor academic outcomes, increased psychological distress, and heightened risk of suicidal behaviour (Craske et al., 2017). In Nigeria, studies have reported alarmingly high prevalence rates, with anxiety affecting as many as 67.8% of university students in some settings (Lamidi, 2016).

Stress is another major contributor to psychological difficulties among university students. Stress arises when individuals perceive that environmental demands exceed their available coping resources (Benavente et al., 2015; Oduwaiye et al., 2017). University students face numerous stressors, including academic workload, examination pressure, financial difficulties, family expectations, time management challenges, and adjustment to new environments (Freire et al., 2020; Karyotaki et al., 2020; Liu et al., 2019). Excessive stress has been associated with reduced academic motivation, poor academic performance, increased dropout rates, and adverse physical and psychological health outcomes (Pascoe et al., 2020; Shultz, 2011).

While mental health problems are highly prevalent among undergraduates, evidence suggests that certain early life experiences may increase vulnerability to depression, anxiety, and stress.

One such factor is exposure to adverse childhood experiences (ACEs). ACEs refer to potentially traumatic events occurring before the age of eighteen, including abuse, neglect, and household dysfunction (Broekhof et al., 2023; Scully et al., 2020). Abuse encompasses emotional, physical, and sexual abuse, while neglect includes emotional and physical neglect. Household dysfunction includes experiences such as parental substance abuse, parental mental illness, domestic violence, family separation, and economic hardship (Broekhof et al., 2023; Gu et al., 2022). Exposure to ACEs is widespread across the globe. A recent systematic review involving over half a million adults from twenty two countries found that approximately six in ten adults had experienced at least one ACE during childhood (Madigan et al., 2023). In Nigeria, findings from the Violence Against Children Survey revealed that about sixty percent of children had experienced at least one form of violence before the age of eighteen, while many reported multiple forms of victimization (Nigeria Violence Against Children Survey, 2014). Similarly, Agbaje et al. (2021) reported that 86.7% of tertiary institution students in southeastern Nigeria had experienced at least one ACE, with more than forty percent reporting four or more adverse experiences.

Research consistently demonstrates that ACEs have profound and enduring effects on mental health across the life course (Fergusson et al., 2013; Merrick et al., 2017). One explanation is that chronic exposure to childhood adversity alters the functioning of the hypothalamic pituitary adrenal (HPA) axis, resulting in long term changes in brain structures involved in emotional regulation and stress processing, such as the amygdala and hippocampus (Teicher & Samson, 2016). Consequently, individuals exposed to ACEs are more likely to experience depression, anxiety, post-traumatic stress disorder, and other psychological difficulties later in life (Felitti et al., 1998). Moreover, studies have reported a dose response relationship whereby increasing exposure to ACEs is associated with progressively poorer mental health outcomes (Hughes et al., 2017; Madigan et al., 2023).

Although the relationship between ACEs and mental health is well established, growing evidence suggests that coping strategies may represent an important mechanism through which childhood adversity influences psychological outcomes. Coping refers to the cognitive and behavioural efforts individuals employ to manage situations appraised as stressful or exceeding their resources (Lazarus & Folkman, 1984). Individuals may adopt problem focused coping strategies aimed at addressing the source of stress, emotion focused strategies aimed at regulating emotional responses, or avoidant strategies that involve disengagement from stressors (Skinner et al., 2003). The effectiveness of these coping responses can substantially influence mental health outcomes.

The importance of coping strategies in understanding the effects of ACEs can be explained through the Transactional Model of Stress and Coping proposed by Lazarus and Folkman (1984). The model conceptualizes stress as a dynamic interaction between individuals and their environments. According to the theory, individuals first engage in primary appraisal, during which they evaluate whether an event is irrelevant, beneficial, or threatening to their well being. Subsequently, during secondary appraisal, they assess their available coping resources and determine how to respond to the perceived stressor. Psychological outcomes are therefore influenced not only by exposure to stressful events but also by how individuals interpret those events and the coping strategies they employ. Applied to the present study, exposure to ACEs may shape how undergraduates appraise stressful experiences and influence their preference for adaptive or maladaptive coping strategies, which in turn may affect their levels of depression, anxiety, and stress.

Empirical evidence increasingly supports the mediating role of coping strategies in the relationship between childhood adversity and mental health outcomes. For example, Woo et al.

(2023) found that emotion focused coping significantly mediated the relationship between psychological distress and subsequent mental health disorders among adults in the United States. Similarly, Alava (2022) reported that avoidance coping mediated the association between ACEs and mental distress among undergraduate students. Su et al. (2020) found that positive coping skills partially explained the relationship between childhood maltreatment and mental health outcomes among more than 25,000 Canadian adults. Longitudinal evidence from Sheffler et al. (2019) further demonstrated that individuals with higher ACE exposure were more likely to adopt avoidant emotion focused coping strategies, which subsequently contributed to poorer health outcomes.

Additional studies have yielded similar findings. Craig et al. (2023) found that avoidance coping mediated the relationship between ACEs and depressive symptoms among college students. Francisco et al. (2016) reported that coping strategies explained the association between family functioning and adolescent mental health problems, while Arslan (2017) found that both active and avoidant coping mediated the relationship between psychological maltreatment and mental health difficulties among adolescents. Likewise, Hager and Runtz (2012) observed that emotion focused coping partially explained the association between childhood maltreatment and poorer health outcomes among women. Collectively, these studies suggest that coping strategies may represent a critical pathway through which childhood adversity influences later psychological functioning.

Despite growing international evidence, several gaps remain in the literature. First, relatively few studies have examined the mediating role of coping strategies in the relationship between ACEs and specific mental health outcomes such as depression, anxiety, and stress simultaneously. Second, much of the existing evidence originates from Western countries, limiting the generalizability of findings to developing countries such as Nigeria. Third, there is a paucity of studies focusing specifically on undergraduate populations in northeastern Nigeria, particularly in Taraba State, where students may face unique psychosocial challenges and limited access to mental health services.

Given the high prevalence of both ACEs and mental health difficulties among young adults, understanding the mechanisms that explain this relationship is essential for developing effective prevention and intervention strategies. Therefore, the present study examines the mediating role of coping strategies in the relationship between adverse childhood experiences and mental health outcomes, specifically depression, anxiety, and stress, among undergraduate students in universities in Taraba State, Nigeria.

Methodology

Study Design

This study employed a quantitative cross sectional design to examine whether coping strategies mediate the relationship between adverse childhood experiences (ACEs) and mental health outcomes among undergraduate students in Taraba State, Nigeria. The design was considered appropriate because it enabled the assessment of ACEs, coping strategies, and mental health indicators within a single period of data collection and facilitated the examination of direct and indirect relationships among the study variables.

Population, Sample and Sampling Technique

The study was conducted among full time undergraduate students enrolled in three universities in Taraba State, namely Taraba State University, Jalingo, Federal University Wukari, and Kwararafa University, Wukari. The target population comprised students from different faculties, departments, and levels of study within the three institutions. University records

indicated an estimated student population of 31,583, consisting of 22,326 students from Taraba State University, 8,310 from Federal University Wukari, and 947 from Kwararafa University.

Using the Taro Yamane formula for finite populations at a 5% margin of error, a minimum sample size of 394 participants was obtained. To improve representativeness and account for possible incomplete responses, 400 questionnaires were administered. Of these, 382 validly completed questionnaires were retained for analysis. The average age of respondents was 21.6 years with 55.2% being females while 44.8% were males.

A multistage sampling procedure was adopted. In the first stage, proportionate allocation was used to determine the number of participants selected from each university based on student population size. Consequently, 261 students were drawn from Taraba State University, 125 from Federal University Wukari, and 14 from Kwararafa University. The second stage involved the random selection of faculties from each institution. Subsequently, departments were randomly selected from the chosen faculties. In the final stage, eligible students within the selected departments were recruited through simple random sampling until the required sample size was attained. This procedure enhanced the likelihood of obtaining a sample that reflected the diversity of the undergraduate population across the three universities.

Method of Data Collection

The study collected data using self-administered questionnaires consisting of socio-demographic data and five standardized instruments namely:

Adverse Childhood Experiences Questionnaire (ACE-10): The Adverse Childhood Experiences (ACE) Questionnaire, commonly referred to as the ACE-10, is a self-reporting tool designed to identify individuals who may have experienced traumatic events during their childhood (Anda et al., 2010). The instrument consists of ten dichotomous items assessing exposure to abuse, neglect, and household dysfunction before the age of eighteen years. Responses are scored as 0 (No) and 1 (Yes), with higher cumulative scores indicating greater exposure to childhood adversity. Previous studies have reported satisfactory reliability and validity across adolescent and adult populations (Cronbach's $\alpha = 0.701$ for adolescents and 0.88 for adults) (Kovács Tóth et al., 2023).

Patient Health Questionnaire (PHQ-9): Depressive symptoms were measured using the Patient Health Questionnaire (PHQ-9) developed by Kroenke et al. (2001). The scale comprises nine items rated on a four point response format ranging from 0 (Not at all) to 3 (Nearly every day). Total scores range from 0 to 27, with higher scores reflecting greater severity of depressive symptoms. The questionnaire has shown consistent internal reliability across diverse patient groups, with Cronbach's alpha values consistently exceeding .85 (Kroenke et al, 2001).

Generalized Anxiety Disorder Scale (GAD-7): Anxiety symptoms were assessed using the Generalized Anxiety Disorder Scale (GAD-7) developed by Spitzer et al. (2006). The instrument contains seven items rated on a four point scale from 0 (Not at all) to 3 (Nearly every day). Scores range from 0 to 21, with higher scores indicating higher anxiety symptoms. The GAD-7 is a valid and reliable tool for measuring symptoms of anxiety and several anxiety disorders. Cronbach's alpha (α) of 0.93 have been reported among a sample of undergraduates (Dhira et al., 2021).

Perceived Stress Scale (PSS-10): Perceived stress was measured using the 10 item version of the Perceived Stress Scale (PSS-10) developed by Cohen et al. (1983). The instrument assesses the extent to which individuals perceive situations in their lives as stressful during the preceding month. Responses are provided on a five point scale ranging from 0 (Never) to 4 (Very Often). The PSS-10 has good psychometric characteristics and has demonstrated to be an

effective measure of perceived stress. It has good internal consistency indicated by Cronbach's alpha of 0.79.

Brief-COPE Inventory: Coping strategies were assessed using the Brief COPE Inventory developed by Carver (1997). The instrument consists of 28 items measuring a broad range of coping responses. Coping responses were grouped into three dimensions: problem focused coping, emotion focused coping, and dysfunctional coping (Carver, (1997). Items are rated on a four point scale ranging from 1 (I have not been doing this at all) to 4 (I have been doing this a lot). Higher scores indicate greater use of the respective coping strategy. The Brief COPE has good psychometric properties. Its Cronbach's alpha reliability index ranged from 0.72–0.84 (Cooper et al., 2008).

Data Analysis

Data were analysed using the Statistical Package for the Social Sciences (SPSS) Version 27. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were computed to summarize participants' demographic characteristics and study variables. To test the hypothesized mediating role of coping strategies, mediation analyses were conducted using Hayes' PROCESS macro Version 4.2. Separate mediation models were estimated for depression, anxiety, and stress outcomes. All analyses were conducted at a 0.05 level of significance.

Results

Table 1: Mediation Analysis Summary (ACEs → Depression via Coping Strategies)

DV	Predictors	B	SE	p-value	LLCI	ULCI
Depression	Constant	1.038	1.225	.397	-1.371	3.448
	ACEs	.371	.100	.000	.174	.567
	Emotion-Focused Coping	.078	.076	.311	-.073	.228
	Problem-Focused Coping	-.035	.082	.670	-.196	.126
	Dysfunctional Coping	.157	.049	.001	.061	.253
	Indirect Effect via Emotion-Focused Coping	.001	.011	ns	-.022	.026
	Indirect Effect via Problem-Focused Coping	.006	.013	Ns	-.018	.035
	Indirect Effect via Dysfunctional Coping	.043	.027	.000	.001	.106
	R					.315
	R ²					.099
	F					10.370**
	Df					4, 377

Source: Field Survey, 2025

The results of mediation analysis in Tale 1 showed that ACEs were positively associated with depression ($\beta = .371$, $p < .001$). Among the three coping dimensions, only dysfunctional coping significantly predicted depressive symptoms. The indirect effect of ACEs on depression through dysfunctional coping was significant ($\beta = .043$, $SE = .027$, 95% CI [.001, .106]),

indicating a partial mediation effect. In contrast, emotion focused coping and problem focused coping did not significantly mediate the relationship between ACEs and depression. The model explained 9.9% of the variance in depressive symptoms ($R^2 = .099$, $F = 10.370$, $p < .001$).

Table 2: Mediation Analysis Summary (ACEs → Anxiety via Coping Strategies)

DV	Predictors	B	SE	p-value	LLCI	ULCI
Anxiety	Constant	-.052	1.151	.964	-2.315	2.212
	ACEs	.476	.094	.000	.291	.660
	Emotion-Focused Coping	-.063	.072	.382	-.204	.078
	Problem-Focused Coping	.060	.077	.439	-.091	.210
	Dysfunctional Coping	.232	.046	.000	.142	.322
	Indirect Effect via Emotion-Focused Coping	-.001	.011	Ns	-.028	.018
	Indirect Effect via Problem-Focused Coping	-.010	.014	Ns	-.042	.017
	Indirect Effect via Dysfunctional Coping	.063	.036	.000	.001	.143
	R					.398
	R ²					.158
	F					17.730**
	Df					4, 377

Source: Field Survey, 2025

The mediation model (Table 2) assessing anxiety as the outcome variable was statistically significant ($R^2 = .258$, $F = 17.730$, $p < .001$). Findings revealed that dysfunctional coping significantly mediated the relationship between ACEs and anxiety ($\beta = .063$, $SE = .036$, 95% CI [.001, .143]). However, neither emotion focused coping nor problem focused coping demonstrated significant indirect effects. These results suggest that dysfunctional coping represents an important pathway through which childhood adversity contributes to anxiety symptoms among undergraduates.

Table 3: Mediation Analysis Summary (ACEs → Stress via Coping Strategies)

DV	Predictors	B	SE	p-value	LLCI	ULCI
Stress	Constant	15.854	.974	.000	13.938	17.769
	ACEs	.156	.079	.050	.000	.312
	Emotion-Focused Coping	.087	.061	.151	-.032	.207
	Problem-Focused Coping	-.114	.065	.081	-.241	.014
	Dysfunctional Coping	.097	.039	.012	.021	.173
	Indirect Effect via Emotion-Focused Coping	.001	.011	ns	-.025	.024
	Indirect Effect via Problem-Focused Coping	.019	.015	ns	-.002	.054
	Indirect Effect via Dysfunctional Coping	.027	.019	.000	.001	.069
	R					.234
	R ²					.055
	F					5.468**
	Df					4, 377

Source: Field Survey, 2025

The mediation analysis summarized in Table 3 investigates the role of coping strategies in the relationship between Adverse Childhood Experiences (ACEs) and stress. As shown in the

table, the model is significant ($R^2 = .234$; $F = 5.468$; $p < .01$). Dysfunctional coping significantly mediated the association between ACEs and perceived stress ($\beta = .027$, $SE = .019$, 95% CI [.001, .069]). Conversely, the indirect effects through emotion focused coping and problem focused coping were not statistically significant. These findings indicate that dysfunctional coping partially explains the relationship between childhood adversity and elevated stress levels among university students.

Discussion of Findings

The present study investigated whether coping strategies serve as mechanisms linking adverse childhood experiences (ACEs) to depression, anxiety, and stress among undergraduate students in Taraba State, Nigeria. Across all three mental health outcomes, a consistent pattern emerged in which dysfunctional coping significantly mediated the relationship between ACEs and psychological distress, whereas emotion focused and problem focused coping did not demonstrate significant mediating effects. The finding that dysfunctional coping mediated the relationship between ACEs and depressive symptoms suggests that students exposed to childhood adversity may be more likely to adopt maladaptive methods of managing stress, such as denial, behavioural disengagement, self-blame, self-distraction, venting, and substance use. These coping responses may intensify emotional difficulties rather than resolve them, thereby increasing vulnerability to depression. This finding is consistent with previous studies reporting that avoidance based and dysfunctional coping strategies represent important mechanisms through which childhood adversity contributes to poorer mental health outcomes (Alava, 2022; Craig et al., 2023).

Similarly, dysfunctional coping emerged as a significant mediator of the relationship between ACEs and anxiety. This finding supports the proposition that exposure to adverse experiences during childhood may interfere with the development of effective emotional regulation skills, leading individuals to rely on maladaptive coping responses when confronted with later stressors. Within the university environment, where students are faced with academic, financial, and social pressures, these ineffective coping strategies may increase feelings of worry, fear, and psychological tension. The finding aligns with previous evidence indicating that childhood adversity is associated with greater reliance on avoidant and maladaptive coping patterns, which subsequently increase vulnerability to anxiety and related psychological difficulties (McLafferty et al., 2019).

The results further demonstrated that dysfunctional coping mediated the relationship between ACEs and perceived stress. Students with histories of childhood adversity may experience greater difficulty managing everyday challenges and demands, making them more likely to perceive situations as overwhelming or uncontrollable. Because dysfunctional coping fails to address the source of stress effectively, it may perpetuate emotional strain and heighten stress perceptions. This finding supports earlier research suggesting that exposure to childhood adversity impairs the development of adaptive stress management skills and increases susceptibility to later psychological difficulties (Sheffler et al., 2019).

An important observation from the study is that neither emotion focused coping nor problem focused coping significantly mediated the relationship between ACEs and any of the mental health outcomes examined. Although these coping strategies are generally regarded as adaptive, their non-significant effects suggest that they may not sufficiently explain the pathway linking childhood adversity to depression, anxiety, and stress within this population. One possible explanation is that students with extensive histories of adversity may underutilize adaptive coping strategies or may not possess the necessary resources and support systems required to use them effectively. Another possibility is that the enduring psychological effects of childhood adversity are sufficiently profound that the protective influence of adaptive coping

strategies becomes limited. The findings are broadly consistent with the Transactional Model of Stress and Coping (Lazarus & Folkman, 1984), which emphasizes that the impact of stressful experiences depends not only on the events themselves but also on how individuals appraise and respond to those experiences. The results suggest that childhood adversity may influence the development of maladaptive coping patterns that persist into young adulthood, thereby increasing susceptibility to depression, anxiety, and stress.

Conclusion and Recommendations

This study examined the mediating role of coping strategies in the relationship between adverse childhood experiences and mental health outcomes among undergraduate students in Taraba State, Nigeria. The findings demonstrate that dysfunctional coping serves as a significant pathway linking ACEs to depression, anxiety, and stress. In contrast, emotion focused coping and problem focused coping did not significantly mediate these relationships.

Based on the findings of this study, the following recommendations are proposed:

University authorities should strengthen campus mental health services through the provision of accessible counselling and psychological support programmes that specifically address the long term effects of childhood adversity.

Routine mental health screening programmes should be implemented within universities to facilitate the early identification of students with histories of adverse childhood experiences and elevated levels of psychological distress.

Counselling units should develop and implement psychoeducational interventions aimed at reducing dysfunctional coping behaviours while promoting healthier and more adaptive coping strategies.

Training programmes should be organized for academic and non-academic staff to improve awareness of the psychological consequences of childhood adversity and enhance their capacity to identify and support vulnerable students.

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