

## INFLUENCE OF ADVERSE CHILDHOOD EXPERIENCES ON MENTAL HEALTH AMONG UNDERGRADUATES OF UNIVERSITIES IN TARABA STATE

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### ABSTRACT

*This study investigated the influence of Adverse Childhood Experiences (ACEs) on mental health outcomes specifically depression, anxiety and stress among undergraduates of universities in Taraba State, Nigeria. The study adopted a cross sectional study design. The respondents consist of 382 undergraduate student selected from Federal University Wukari, Taraba State University Jalingo, and Kwararafa University. Data was collected using self-administered questionnaires consisting of participants' socio-demographic data, Adverse Childhood Experiences Questionnaire (ACE-10), Patient Health Questionnaire-9 (PHQ-9), Generalised Anxiety Disorder Scale (GAD-7), Cohen Perceived Stress Scale (PSS). Three hypotheses were postulated and tested using linear regression. The results showed that Adverse Childhood Experiences have significant positive influence on depression [ $F(1, 380) = 17.532$ ;  $R^2 = .044$ ;  $p < 0.01$ ]; ACEs have a positive ( $\beta = .272$ ) influence on anxiety and this influence is significant [ $F(1, 380) = 30.329$ ;  $R^2 = 0.074$ ;  $p < 0.01$ ]; ACEs have significant positive influence perceived stress [ $F(1, 380) = 6.579$ ;  $R^2 = 0.017$ ;  $p < 0.05$ ]. The study concludes that childhood adversity influences mental health among undergraduates in Taraba State. The study recommends among others that the managements of universities across Taraba State in collaboration with the Student Affairs Division and licensed clinical psychologists should create better awareness and education around mental health, especially as it relates to past experiences, to ensure that students are not silently struggling with the consequences of childhood trauma while trying to navigate the academic and social demands of university life.*

**Keywords:** Adverse Childhood Experiences, Mental Health, Depression, Anxiety, Stress.

### Introduction

Mental health has become an increasingly important public health concern worldwide, particularly among young adults and university students. The World Health Organization (WHO) defines mental health as a state of wellbeing in which individuals realize their abilities, cope effectively with the normal stresses of life, work productively, and contribute meaningfully to their communities (WHO, 2014). Mental health is therefore essential for academic success, social functioning, and overall quality of life. However, evidence suggests that mental health problems are highly prevalent among university students, with approximately one third of undergraduates experiencing significant symptoms of mental health disorders such as depression, anxiety, and suicidality (Oswalt et al., 2020).

The growing prevalence of mental health problems among young people has become a major global concern. Most mental health disorders emerge between the ages of 15 and 24 years, a period that overlaps with university education (Basta et al., 2022). The burden of mental illness extends beyond individual suffering and contributes substantially to social and economic costs. Globally, mental disorders were estimated to cost approximately \$2.5 trillion in 2010, with projections suggesting that this figure may exceed \$6 trillion by 2030 (Gustavsson et al., 2011). Among university students, poor mental health has been associated with lower academic achievement, reduced productivity, increased dropout rates, and impaired interpersonal relationships (Eisenberg et al., 2009).

Among the various mental health challenges experienced by undergraduates, depression, anxiety, and stress are among the most common and debilitating (Limone & Toto, 2022; Shah & Pol, 2020). Depression is characterized by persistent sadness, loss of interest in previously enjoyable activities, disturbances in sleep and appetite, feelings of worthlessness, and difficulty concentrating (APA, 2022). Research indicates that university students are particularly vulnerable to depression, with prevalence estimates exceeding those observed in the general population (Ibrahim et al., 2017). Depression has been linked to poor academic performance, substance abuse, impaired decision making, and increased risk of suicidal behaviour (Pacheco et al., 2017; Puthran et al., 2016; WHO, 2017).

Similarly, anxiety is a common psychological condition characterized by excessive fear, apprehension, and physiological arousal in response to perceived threats or uncertainty. Although anxiety can be adaptive in certain situations, excessive anxiety may impair daily functioning and academic performance (Windarwati et al., 2022). Previous studies have reported high rates of anxiety among university students, including Nigerian undergraduates (Rastogi et al., 2025; Abugu et al., 2025). Persistent anxiety has been associated with academic difficulties, reduced well being, and increased risk of mental health complications (Craske et al., 2017).

Stress also constitutes a major challenge for university students. Academic workload, examinations, financial constraints, family expectations, and adjustment to university life often place substantial demands on students (Freire et al., 2020; Karyotaki et al., 2020; Liu et al., 2019). When these demands exceed available coping resources, stress may negatively affect both physical and psychological health (Oduwaiye et al., 2017). Excessive stress has been linked to poor academic outcomes, reduced motivation, increased dropout intentions, and adverse health consequences (Pascoe et al., 2020; Chongjin et al., 2025).

Although mental health problems are prevalent among undergraduates, not all students are equally vulnerable to depression, anxiety, and stress. Increasing attention has therefore been directed toward identifying factors that predispose individuals to poor mental health outcomes. One such factor is exposure to Adverse Childhood Experiences (ACEs). ACEs refer to potentially traumatic experiences occurring before the age of 18 years, including various forms of abuse, neglect, and household dysfunction (Broekhof et al., 2023; Scully et al., 2020). These experiences include emotional, physical, and sexual abuse, emotional and physical neglect, parental separation, household substance abuse, parental mental illness, economic hardship, and exposure to domestic violence (Broekhof et al., 2023; Gu et al., 2022).

Exposure to ACEs is widespread across the world. A recent systematic review and meta analysis estimated that approximately six out of every ten adults globally have experienced at least one adverse childhood experience (Madigan et al., 2023). Evidence from Nigeria similarly suggests a high prevalence of childhood adversity. Findings from the Nigeria Violence Against Children Survey revealed that a majority of Nigerian children experience at least one form of violence before the age of 18 years. Furthermore, a study among tertiary institution students in southeastern Nigeria reported that 86.7% had experienced at least one ACE, while more than 40% reported exposure to four or more ACEs (Abgaje et al., 2021).

The association between ACEs and mental health has been explained through both biological and psychosocial mechanisms. Exposure to chronic adversity during childhood may disrupt the normal development of the brain's stress response system, resulting in long term alterations in emotional regulation, stress reactivity, and cognitive functioning (Teicher & Samson, 2016). Consequently, individuals exposed to ACEs may become more susceptible to psychological disorders across the life course. Previous research has consistently demonstrated that ACEs are associated with increased risks of depression, anxiety disorders, stress related conditions, and other adverse mental health outcomes (Felitti et al., 1998; Hughes et al., 2017).

Empirical evidence further supports the relationship between ACEs and mental health outcomes. Studies conducted across different countries have consistently reported significant associations between childhood adversity and depressive symptoms among adolescents, university students, and adults (Amone P'Olak & Letswai, 2020; Kim et al., 2022; Ndu & Israel, 2023). Similar findings have been reported regarding anxiety, with studies demonstrating that individuals exposed to ACEs are more likely to experience anxiety symptoms and anxiety disorders than their counterparts without such experiences (Chi et al., 2021; Davies et al., 2022; Nevárez Mendoza et al., 2022; Yu et al., 2023). Likewise, evidence indicates that ACEs contribute significantly to elevated stress levels and psychological distress among both students and adults (Byansi et al., 2023; Haslam et al., 2023; Karatekin & Ahluwalia, 2020; Mosley Johnson et al., 2021).

Despite the growing body of international evidence linking ACEs with depression, anxiety, and stress, studies examining these relationships among Nigerian undergraduates remain limited. Existing research has largely been conducted in Western countries and parts of Asia, with relatively little attention given to university students in Nigeria. This gap is particularly important given the unique social, economic, and educational challenges faced by Nigerian undergraduates, including financial hardship, limited access to mental health services, and persistent stigma surrounding mental health problems. Furthermore, empirical evidence from northeastern Nigeria, particularly Taraba State, remains scarce. Consequently, there is limited understanding of the extent to which adverse childhood experiences influence depression, anxiety, and stress among undergraduates in this context. This study therefore examined the influence of Adverse Childhood Experiences on depression, anxiety, and stress among undergraduates of universities in Taraba State, Nigeria. This version is much closer to what most psychology, public health, and social science journals expect in an Introduction section. It synthesizes the empirical evidence instead of reviewing every study individually while clearly establishing the research gap and justification for the study.

## **Method**

### **Participants**

Total of 382 undergraduate students studying full time in Taraba State University, Federal University Wukari and Kwararafa University participated in the study. The average age of respondents was 21.6 years with a standard deviation of 3.38, suggesting that most participants were fairly young. Two out of three respondents (66.2%) were between the ages of 16 and 22, followed by 31.4% who were aged 23 to 29. Just 1.8% were between 30 and 36 years while 0.5% were aged 37 to 44. In terms of sex, there were more female (55.2%) than male (44.8%) students in the sample. Christianity was the predominant religion among the respondents, with 70.2% identifying as Muslims. Islam was reported by 25.7% of participants, and 4.2% indicated they belonged to other religious groups. Regarding marital status, majority of the respondents (89.5%) were single, married individuals accounted for 9.2%, while only 1.0% were divorced and 0.3% were widowed.

### **Instruments**

The study relied strictly on primary data collected using self-administered questionnaires. The questionnaires consists of the participants' socio-demographic data and five standardized psychological instruments which are:

#### *Adverse Childhood Experiences (ACE) 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). This questionnaire comprises ten questions that explore various forms of childhood trauma. Participants are asked to indicate whether they encountered specific adverse experiences before the age of eighteen by answering "yes" or "no." Each affirmative response is assigned a single point. The ACE-10 has been tested in various populations, including adults and adolescents (Anda et al., 2010). It has shown acceptable internal consistency (Cronbach's alpha = 0.701 for adolescents and 0.88 for adults). It has good criterion validity as it correlated positively with the Strengths and Difficulties Questionnaire and Health Behavior of School Children Symptom Checklist ((Kovács-Tóth et al., 2023). It also demonstrated good concurrent validity with the Childhood Trauma Questionnaire (Kazeem, 2015).

#### *Patient Health Questionnaire-9 (PHQ-9)*

The Patient Health Questionnaire-9 (PHQ-9), developed by Kroenke et al. in 2001, is a widely used tool for assessing depressive symptoms. It serves multiple purposes in healthcare, including screening for depression, diagnosing its severity, monitoring the condition over time, and evaluating the effectiveness of treatment. Designed based on the DSM-5 criteria for depressive disorder, the PHQ-9 consists of nine questions that inquire about the frequency of depressive symptoms experienced within the past two weeks. Respondents rate their symptoms on a four-point Likert scale ranging from "not at all" to "nearly every day." Examples of items include feelings of sadness, loss of interest, changes in appetite, and sleep disturbances (Thombs et al., 2014). The total score for the PHQ-9 ranges from 0 to 27, calculated by summing the scores for each of the nine items. The PHQ-9 has demonstrated consistent internal reliability across diverse patient groups, with Cronbach's alpha values consistently exceeding .85 (Kroenke et al, 2001; Sun et al., 2020. Also, the PHQ-9 has good

construct validity. It correlates positively and significantly with the Hamilton Depression Scale (HAMD-17; Sun et al., 2020).

#### *Generalised Anxiety Disorder Scale (GAD-7)*

The Generalized anxiety disorder scale also known as the GAD-7 is a self-report scale designed to quantify the severity of anxiety symptoms (Spitzer et al., 2006). It comprises seven items, each assessing the frequency of specific anxiety-related concerns experienced by the respondent experienced within a two-week period. Respondents rate the intensity of these symptoms on a four-point scale ranging from “not at all” scored as 0 to nearly every day scored as 3. The total score, which is calculated by summing up the scored items, is used as a numerical representation of anxiety level with higher scores indicating greater severity of anxiety symptoms. The score ranges from 0-27. The GAD-7 is a valid and reliable tool for measuring symptoms of anxiety and several anxiety disorders. Cronbach's alpha ( $\alpha$ ) of 0.93 have been reported among a sample of undergraduates. The scale also demonstrates good convergent validity ( $r = 0.934$ ) with the Patient Health Questionnaire (PHQ-9) (Dhira et al., 2021)

#### *Perceived Stress Scale (PSS)*

To assess perceived stress levels, this study employed the widely recognized Perceived Stress Scale (PSS), developed by Cohen et al. (1983). This established questionnaire consists of ten items designed to evaluate how individuals appraise and interpret the stressful events in their daily lives. Participants are asked to rate the frequency of experiencing stress-related feelings or situations within the past month on a five-point Likert scale ranging from "Never" to "Very Often." Example items include “In the last month, how often have you been upset because of something the happened unexpectedly?” ‘In the last month, how often have you felt nervous and ‘stressed’?’. After completing the questionnaire, the scoring for items 4, 5, 7, and 8 is reversed to accurately reflect the intended meaning of these questions after which responses are tallied to generate a total stress score. Higher PSS scores correspond to higher levels of perceived stress. The scale typically ranges from 0 to 40, with scores approaching 40 indicating significantly higher levels of perceived stress. 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. It has a Test-retest reliability of 0.91. It has strong convergent validity and concurrent validity as it correlates significantly and positively with stigma, depression, and anxiety (Xiao et al., 203)

#### **Procedure**

The researchers sought and obtained formal written approval from the three universities through their registrars. On the designated day, the researcher introduced himself to the participants, provided a clear explanation of the study's objectives and the importance of their participation. Building rapport with the participants was essential to foster cooperation and trust. The purpose of the questionnaire was explained to them in order to alleviate any concerns, and they were assured of strict confidentiality regarding their responses. Once the questionnaires are administered to the selected participants, ample time was allocated for completion. Upon collection, all completed questionnaires were handled with care to maintain data security.

## Design/Statistics

This study utilized a cross-sectional survey research design. Descriptive statistics, including frequency counts and percentage distribution, were used to analyze demographic data. Inferential statistics was employed to test the research hypotheses. Specifically, Regression analysis was used to test the relationships between the variables as postulated in hypotheses 1, 2 and 3.

## Results

**Tale 1: Summary Results Linear Regression Analysis showing the Influence of ACEs on Depression**

| DV         | Variables  | $\beta$ | t      | R    | R <sup>2</sup> | F      | Sig. |
|------------|------------|---------|--------|------|----------------|--------|------|
| Depression | (Constant) |         | 14.190 |      |                |        |      |
|            | ACEs       | .210    | 4.187  | .210 | .044           | 17.532 | .000 |

The results presented in Table 1 indicted that ACEs have a significant positive influence on depression among undergraduates in Taraba State [ $F(1, 380) = 17.532$ ;  $R^2 = .044$ ;  $p < 0.01$ ].

**Table 2: Summary Results Linear Regression Analysis showing the Influence of ACEs on Anxiety**

| DV      | Variables  | $\beta$ | t      | R                 | R <sup>2</sup> | F      | Sig.              |
|---------|------------|---------|--------|-------------------|----------------|--------|-------------------|
| Anxiety | (Constant) |         | 13.657 |                   |                |        |                   |
|         | ACEs       | .272    | 5.507  | .272 <sup>a</sup> | .074           | 30.329 | .000 <sup>b</sup> |

The results presented in Table 2 indicates that ACEs have a positive ( $\beta = .272$ ) influence on anxiety and this influence is significant [ $F(1, 380) = 30.329$ ;  $R^2 = 0.074$ ;  $p < 0.01$ ]. This suggests that experiencing adversity during childhood is associated with significantly higher likelihood of anxiety in adulthood.

**Table 3: Summary Results Linear Regression Analysis showing the Influence of ACEs on Perceived Stress**

| DV     | Variables  | $\beta$ | t      | R                 | R <sup>2</sup> | F     | Sig. |
|--------|------------|---------|--------|-------------------|----------------|-------|------|
| Stress | (Constant) |         | 57.609 |                   |                |       |      |
|        | ACEs       | .130    | 2.565  | .130 <sup>a</sup> | .017           | 6.579 | .011 |

The results in Table 3 indicate that adverse childhood experiences have a positive influence on perceived stress ( $\beta = .130$ ). The overall model is significant [ $F(1, 380) = 6.579$ ;  $R^2 = 0.017$ ;  $p < 0.05$ ]. This suggests that higher levels of adverse childhood experiences are associated with a significantly increased likelihood or severity of perceived stress.

## Discussion

This study set out to examine the influence of Adverse Childhood Experiences (ACEs) on mental health outcomes with specific focus on depression, anxiety, and perceived stress among undergraduates in universities across Taraba State, Nigeria. The study found that ACEs have a significant positive influence on depression among undergraduates in universities across Taraba State, Nigeria. The significant positive relationship observed in this study suggests that undergraduates who experienced ACEs are more likely to report

depressive symptoms. This finding is in agreement with a large body of empirical literature which has consistently demonstrated that early life adversity significantly contributes to the onset and persistence of depression (Ndu & Israel, 2023; Shah et al., 2021). This finding aligns with the Beck's cognitive theory of depression which posited that cognitive patterns (e.g., negative self-schemas, cognitive distortions) contribute to depression. It is possible that experiencing adversities such as abuse or neglect during childhood can shape negative beliefs about oneself, others, or the future, leading to a cognitive vulnerability to depression. In the context of undergraduates in Taraba State, these findings are especially relevant considering the fact that transitioning into university life is already a period marked by heightened stress, identity exploration, and social change (Yu et al., 2023). For students who enter this phase of life carrying unresolved trauma from childhood, the burden can be significantly heavier. The presence of depressive symptoms may interfere with academic engagement, social relationships as well their overall quality of life. As a matter of fact, the effects of ACEs may not even be fully recognized or addressed in these young adults due to stigma surrounding mental health in our society as well as the limited access to psychological support services, or inadequate coping resources within university environments.

The study also found that ACEs have a significant positive influence on anxiety among undergraduates in Taraba State. This result suggests that students who experienced adverse events during childhood are more likely to exhibit heightened levels of anxiety. This finding is consistent with existing related research conducted among diverse sample (Nevárez-Mendoza et al., 2022; Chi et al., 2021; Tang, 2021). The confirmation of this hypothesis also suggests that anxiety among undergraduates is not always just a reaction to current academic stressors, but may also be deeply rooted in unresolved past traumas. This finding supports the Freud's psychoanalytic theory of anxiety which posited that anxiety arises from unresolved internal conflicts or repressed emotions, often rooted in early childhood experiences. Adverse Childhood Experiences may create unresolved conflicts that manifest as anxiety in adulthood. In addition, within the context of this study, some students come from homes where they experienced serious challenges, such as poverty, limited access to mental health care, and the stress of living in economic instability. These difficulties can make existing emotional struggles even worse. Children who go through hardship early in life like abuse, neglect, or living in unstable homes often miss out on developing healthy ways to cope with stress. As a result, they may find it harder to handle the pressures of university life. For example, a student who grew up in a stressful or unsafe environment might carry a deep sense of fear or self-doubt. When they face the demands of higher education like exams, competition, or fear of failure these feelings can turn into anxiety.

Furthermore, the study found that ACEs have significant positive influence on perceived stress among undergraduates in Taraba State. This result confirms the hypothesis that individuals with higher levels of adverse childhood experiences are more likely to report elevated levels of perceived stress. This finding is supported by several related research by various scholars (Solberg et al. 2024; Haslam et al., 2023; Byansi et al. (2023). The finding however disagrees with Scorza et al. (2022) who's longitudinal study among Puerto Rican children found insignificant association between ACEs and level of perceived stress. The finding that ACEs have a significant positive influence on perceived stress implies that students who have been exposed to childhood trauma may be more prone to perceiving everyday academic, social, or financial pressures as more intense or threatening, even when

the objective demands are moderate and this heightened stress perception is a result of early conditioning, where traumatic environments shaped their expectations of danger, instability, or unpredictability in the world.

The present study has several key contributions to knowledge across academic several domains which include clinical, and policy domains. It contributes to the growing body of research by providing clear empirical evidence that ACEs significantly predict depression, anxiety, and stress among undergraduates in a Nigerian context. Although previous studies have documented this relationship, most of these studies were conducted in Western settings, this study extends that knowledge to a local population, highlighting the mental health burden of early-life trauma among Nigerian university students. By focusing on undergraduates in Taraba State, the study fills a regional and demographic gap in Nigerian mental health research. Most ACE-related studies in Nigeria have concentrated on urban centres or clinical populations. This study therefore broadens the geographical and contextual scope of knowledge on ACEs and mental health in Nigeria. The study also offers practical contributions by providing data that can guide university administrators, counsellors, and policy makers in designing interventions. It gives extra support to the importance of screening for ACEs, promoting healthy coping strategies, and focusing on mental health services within educational institutions.

The findings of this research may be limited by few factors including noticeable apathy by some students will filling the questionnaires. Some of the respondents were just arbitrarily ticking the responses without carefully reading and following the instructions. This may have introduced some bias into the data collected. Also, sample was drawn exclusively from undergraduates in universities within Taraba State, which may limit the generalizability of the findings to other populations or regions in Nigeria.

Based on the findings of this study, it is recommended that the managements of universities across Taraba State in collaboration with the Student Affairs Division and licensed clinical psychologists should create better awareness and education around mental health, especially as it relates to past experiences, to ensure that students are not silently struggling with the consequences of childhood trauma while trying to navigate the academic and social demands of university life. Also, university management in collaboration with school counselling units and mental health consultants should organize periodic training for lecturers, hostel supervisors, and administrative staff on how to identify early signs of depression, anxiety, and stress in students.

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