



INFLUENCE OF ADVERSE CHILDHOOD EXPERIENCES ON ACADEMIC PERFORMANCE OF 300 LEVEL NURSING STUDENTS IN A FEDERAL UNIVERSITY IN SOUTH-SOUTH REGION OF NIGERIA

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Abstract

Adverse childhood experiences (ACEs) significantly impact academic performance, with lower grades, increased absenteeism, and higher suspension rates. This quantitative study investigates ACEs among 106 fourth-year nursing students at Federal University Otuoke, Bayelsa State. The study aimed to identify ACEs types, determine their influence on academic performance, and identify supportive interventions. Results show a high prevalence of ACEs, with verbal abuse (88%), physical abuse (16%), living with an alcoholic/drug-addicted family member (11%), and physical neglect (11%) being most common. ACEs profoundly impacted academic performance, reducing motivation and engagement (89%), focus (85%), and peer/teacher relationships (94%). Effective interventions included peer support groups (85%), counseling services (66%), tutoring/academic coaching (66%), and mindfulness practices (66%). This study supports existing research highlighting ACEs' detrimental effects on cognitive and emotional development (Houchens et al., 2020; Lee et al., 2022) and the importance of social support, mental health services, and academic accommodations. The findings underscore the need for targeted interventions to mitigate ACEs' effects on nursing students' academic performance. Implications suggest integrating trauma-informed care, supportive relationships, and community resources into nursing education. By addressing ACEs, educators can foster resilience and promote academic success. This study contributes to the growing body of research on ACEs among healthcare professionals, emphasizing the urgency of providing supportive environments for students with ACEs.

Keywords:

Adverse Childhood Experiences, academic performance, trauma-informed care, supportive interventions.

Introduction

The notion of Adverse Childhood Experiences (ACEs) has gained significant attention within the fields of psychology, public health, and education over the past few decades. ACEs are defined as traumatic experiences that occur before the age of 18, including various forms of abuse, neglect, and household challenges (Centers for Disease Control and Prevention, 2021). Childhood is a period of immense cognitive, behavioral, physical, and emotional development, hence regarded as potentially a period of vulnerability. Therefore, for optimal development, children need a safe and supportive environment free from violence. Exposure to traumatic events is associated with changes in the brain. For example, it may trigger a flight–fight/ freeze response that feeds the brain with corticotrophin-releasing hormone, a normal and protective response in stressful situations (Ogadinma, et al., 2020). However, repeated exposure to continuous corticotrophin-releasing hormone production by the brain may result in a permanently heightened state of alertness in the child and the inability to return to the recovered state, causing chronic stress (Ilochi, et al., 2019). This impairs executive functions, memory, and attention deficits due to the constantly heightened neurological state which may later impair the execution of academic tasks. Research has increasingly focused on the impact of ACEs on individuals' educational attainment and academic performance. Several studies have demonstrated that ACEs can negatively affect students' academic outcomes, including school attendance, grade point averages, and test scores (Jimenez et al., 2017). Studies among youths-predominant societies in Africa reported diverse prevalence rates of experiencing at least one ACE, ranging from 46.2% among Nigerian adults to 90% among rural Ugandan adults. Among university and college students, the prevalence rates of experiencing at least one ACE ranged from 58.3% from a Zambian college to 97.6% among Tanzanian pre-college students, which shows a slightly higher burden of childhood maltreatment in East African student communities (Mwanguzi et al., 2023). Despite the growing evidence linking ACEs to academic outcomes, the research is not without limitations. Some studies have failed to establish a direct relationship between ACEs and academic performance (Blodgett et al., 2019). Additionally, there is a need for more longitudinal and experimental research to better understand the causal mechanisms and potential moderators that may influence the association between ACEs and academic performance (Jimenez et al., 2017). Given the potentially detrimental effects of ACEs on students' educational attainment and future life chances, it is essential to explore effective strategies and interventions that can help mitigate these negative consequences (Shonkoff, 2016). This may include trauma-informed educational practices, mental health services, and community-based interventions that address the broader socioeconomic and environmental factors that contribute to ACEs. ACEs represent a significant public health and educational challenge with far-reaching implications for individuals' wellbeing and success (Ilochi, et al., 2019). Continued research in this area is necessary to improve our understanding of the relationship between ACEs and academic performance and to inform the development of effective interventions and policies aimed at promoting resilience and positive outcomes for students who have experienced adversity. Throughout the past years, studies have shown that individuals with a history of ACEs tend to have lower academic performance, including lower grades, increased school absenteeism, and higher rates of school suspensions (Stewart-Tufescu et al., 2022). This has made this study very relevant and needs to be urgently addressed to provide relevant solutions. Understanding these individuals, their backgrounds, and how they learn could

be beneficial in an educational setting. Understanding the factors and how ACEs impacted students also plays an important role in working towards finding proper guidance for students to prosper academically.

Materials and methods

Ethical Considerations

The respondents were adequately informed about the study and verbal consent was obtained before questionnaire was administered. It was ensured that the information provided by respondents is treated with utmost confidentiality, hence, no name or addresses were requested for in the questionnaire. The researcher also ensured that the respondents had the right to voluntarily decide whether to participate in the study or not, without the risk of incurring any penalty or prejudicial treatment. Participants were informed of their right to withdraw from the process at any time during the study. All respondents were treated with due respect and deference without prejudice to their age, race, ethnicity and religion.

Population for the study

The sample population for this study comprised of 130 3rd year Nursing students at Federal University Otuoke, Bayelsa State, selected from the official attendance register for the 2025/2026 academic year.

Sample Size Determination

The sample size was determined using Taro Yamane's formula (1976) which is commonly used for calculating sample size in research. Mathematical illustration of Taro Yamane's formula is:

$$n = \frac{N}{1+N(e)^2}$$

Where:

n- Minimum sample size

N- Population size

e- Alpha level, i.e. e= 0.05 (probability values)

N- 144

Substituting this into the formula:

$$n = \frac{144}{1+144(0.05)^2} = \frac{144}{1+144(0.0025)}$$

$$n = \frac{144}{1+0.36} = \frac{144}{1.36} = 105.8$$

$$n = 105.8 \sim 106.$$

Therefore, a sample size of 106 students was determined for this study.

Sampling Technique

The simple random sampling technique, a probability sampling method was used to select the participants for the study. By using this sampling technique, every member of the population had an equal chance of getting selected. A population of one hundred and thirty (130) nursing students was used and a sample size of 106 respondents selected from it.

Instrument for Data Collection

A self-developed questionnaire was used for this study. The questions were developed using research objectives and literature reviewed by the researcher.

The questionnaire was on the four point Likert-type questions, with a choice of Agree (1), Strongly Agree (2), Disagree (3) and Strongly Disagree (4). The questionnaire was further divided into four sections with a total of twenty (20) questions.

Section A: Background Information. It contains four (4) items to be used to elicit information on the demographic characteristics of the respondents.

Section B: Types of adverse childhood experiences (ACEs) reported by Nursing Students, having seven (7) question items.

Section C: Influence of adverse childhood experiences on academic performance of Nursing Students, consisting of five (5) questions.

Section D: Interventions that can effectively support nursing students who have been exposed to adverse childhood experiences, in achieving academic success. It comprises of four (4) question items.

Validity of Research Instrument

The validity of the research instrument (questionnaire) was established using face validity. Validity is the extent to which a study's findings accurately represent the phenomenon under investigation (Creswell, J.W, 2019). The instrument underwent thorough evaluation by a supervisor and two expert reviewers in Nursing Research in the Department of Nursing Science, University of Port Harcourt, Rivers State, Nigeria. Due corrections were made in line with the experts' advice and included before it was considered valid and distributed.

Reliability of the Research Instrument

The test-retest reliability method was adopted for this study. According to Huberty, C. J (2022), reliability refers to the consistency of a measure or method. Ten (10) copies of the questionnaire was administered to ten (10) subjects who were not part of the population but had similar characteristics with most of the 300 level Nursing students in the University. Two weeks later, fresh copies of the same questionnaire were re-administered to the same respondents. The responses from the first and second pre-test administration was then analyzed using Pearson's

product moment correlation coefficient (PPMCC), and reliability index of 0.8 was obtained which shows that the instrument is positively reliable.

Method of Data Collection

The data needed for the study was collected through the use of researcher-administered questionnaires. After permission was gotten from the appropriate authority, the purpose of the research was well explained to all participants and their consents obtained. Copies of the questionnaires were administered to the selected Nursing students (106) with strict adherence to confidentiality protocols. The questionnaire was retrieved back on spot after completion by the researcher to ensure a return rate of 100%.

Method of Data Analysis

The data obtained from the respondents was collected and analyzed using descriptive statistical method such as percentage, frequency and then presented in tables.

Results

The following results were obtained from this study;

Table 1: Socio-demographic Information of Respondents

Variable	Response option	Frequency (n)	Percentage (%)
Gender	Male	21	20
	Female	85	80
Age (years)	15-17	2	2
	18-20	70	66
	21-23	30	28
	24 and above	4	6
Marital status	Single	104	98
	Married	2	2
	Divorced	0	0
Religion	Christianity	106	100
	Islam	0	0
	African traditional	0	0

From Table 1 above, with regards to the Gender of the respondents, it revealed that 21 (20%) were males and 85 (80%) were females. Regarding the age range of the respondents, it revealed that 2 (2%) respondents were within the age range of 15-17 years, 70 (66%) were within the age range of 18-20 years while 30 (28%) were within the age range of 21-23 years. Regarding the respondents' marital status, the table revealed that 104 (98%) of the respondents were single, 2 (2%) were married, and none (0%) of them were divorced. As regards to the religion, the table

revealed that 106 (100%) were Christians, none (0%) practiced Islamic or African traditional religion.

Table 2: What are the types of ACEs reported by nursing students in Madonna University, Elele, Rivers State?

Variable	A	SA	D	SD
Experienced physical abuse.	10 (9%)	6 (6%)	15 (14%)	75 (71%)
Lived with an alcoholic/ drug-addicted family member.	8 (8%)	3 (3%)	15 (14%)	80 (75%)
Lived with a mentally ill family member	10 (9%)	6 (6%)	15 (14%)	75 (71%)
Experienced physical neglect.	7 (7%)	4 (4%)	15 (14%)	80 (75%)
Felt unloved /unwanted by family.	7 (7%)	4 (4%)	12 (11%)	83 (78%)
Was physically separated from one or both parents.	6 (6%)	5 (5%)	10 (9%)	85 (80%)
Was verbally abused	3 (3%)	90 (85%)	3 (3%)	10 (9%)

Note: A means Agree, SA means Strongly Agree, D means Disagree and SD means Strongly Disagree.

Table 2 presents the types of adverse childhood experiences reported by nursing students. From the table, 10 (9%) of the respondents agreed that they experienced physical abuse, 6(6%) strongly agreed, 15 (14%) disagreed and 75 (71%) strongly disagreed. Regarding living with an alcoholic/drug-addicted family member, 8 (8%) agreed, 3 (3%) strongly agreed, 15 (14%) disagreed and 80 (75%) strongly disagreed. The table also reveals that a small proportion of respondents 16 (15%) reported living with a mentally ill family member, 10 (9%) agreed and 6 (6%) strongly agreed. In contrast, the vast majority 90 (85%) disagreed; 75 (71%) strongly disagreed and 15 (14%) merely disagreed. Regarding physical neglect, 7 (7%) agreed; 4 (4%) strongly agreed, while 95 (89%) disagreed; 15 (14%) disagreed, 80 (75%) strongly disagreed. 7 (7%) of the respondents agreed that they felt unloved/unwanted by their family, 4 (4%) respondents strongly agreed, 12 (11%) disagreed, and the majority, 83 (78%) strongly disagreed. Regarding physical separation from one or both parents, 11 respondents (11%) reported experiencing this adversity; 5 (5%) strongly agreed and 6 (6%) agreed. Conversely, 95 respondents (89%) did not experience physical separation, comprising 10 (9%) who disagreed and 85 (80%) who strongly disagreed. Regarding verbal abuse, a vast majority of respondents; 93 (88%) reported experiencing this form of abuse; 90 (85%) strongly agreed and 3 (3%) agreed. In contrast, a small minority; 13 (12%) did not experience verbal abuse, comprising 3 (3%) who disagreed and 10 (9%) who strongly disagreed.

Table 3 How does ACEs influence academic performance of these Nursing Students in Federal University Otuoke, Bayelsa State?

Variables	A	SA	D	SD
Reduced motivation and engagement in school.	45 (42%)	50 (47%)	7 (7%)	4 (4%)
Reduced ability to focus on school work.	15 (14%)	75 (71%)	10 (9%)	6 (6%)
Inability to form positive relationships with peers and teachers.	10 (9%)	90 (85%)	0 (0%)	6 (6%)
Reduced self-worth or self-esteem	35 (33%)	60 (56.6%)	5 (4.7%)	6 (5.7%)
My childhood experiences have negatively impacted my academic performance.	10 (9%)	20 (19%)	16 (15%)	60 (57%)

Table 3 presents the influence of adverse childhood experiences on academic performance of the students in the study. From the table, 45 (42%) respondents agreed that adverse childhood experiences could lead to reduced motivation and engagement in school, 50 (47%) strongly agreed, 7 (7%) disagreed and 4 (4%) strongly disagreed. Furthermore, the majority of respondents (90, 85%) believed that adverse childhood experiences negatively impact the ability to focus on schoolwork; 75 (71%) strongly agreed and 15 (14%) agreed. Conversely, 16 (15%) disagreed, comprising 10 (9%) who disagreed and 6 (6%) who strongly disagreed. Regarding the capacity of adverse childhood experiences to impede forming positive relationships with peers and teachers, a vast majority (94%) concurred; 90 (85%) strongly agreed and 10 (9%) agreed. Only 6 (6%) strongly disagreed, no respondent disagreed. The Data overwhelmingly suggests that adverse childhood experiences reduces self-worth/self-esteem, as 35 (33%) respondents agreed, 60 (56.6%) strongly agreed, while 5 (4.7%) disagreed and 6 (5.7%) strongly disagreed. 30 (28%) respondents report that their childhood experiences had a negative impact on their academic performance; 10 (9%) agreed and 20 (19%) strongly agreed. Conversely, 76 (72%) disagreed, comprising 60 (57%) who strongly disagreed and 16 (15%) who disagreed.

Table 4: What interventions can be implemented to effectively support nursing students who have been exposed to ACEs, in achieving academic success in Federal University Otuoke, Bayelsa state?

Variables	A	SA	D	SD
Finding a support group of peers who have also been exposed to adverse childhood experiences	15 (14%)	75 (71%)	10 (9%)	6 (6%)
Counseling services offered by the school	20 (19%)	50 (47%)	20 (19%)	16 (15%)
Tutoring/academic coaching	30 (28%)	40 (38%)	16 (15%)	20 (19%)
Mindful practices like meditation	40 (38%)	30 (28%)	20 (19%)	16 (15%)

Table 4 suggests that peer support groups are a highly effective intervention for Nursing students who have experienced adverse childhood experiences, with 85% of respondents expressing agreement (71% strongly agreed, 14% agreed). Only 15% disagreed (9% disagreed, 6% strongly disagreed). 20 (19%) respondents agreed that counseling services offered by the school are also effective interventions, 50 (47%) strongly agreed, 20 (19%) disagreed and 16 (15%) strongly disagreed. The data also suggests that tutoring/academic coaching are also highly effective interventions for these Nursing students, 66% of respondents expressed agreement (38% strongly agreed, 28% agreed). Meanwhile, 34% disagreed (19% strongly disagreed, 15% disagreed). As regards the efficacy of mindfulness practices, such as meditation, as an intervention, 70 (66%) respondents agreed; 40 (38%) agreed and 30 (28%) strongly agreed. 20 (19%) disagreed and 16 (15%) strongly disagreed.

Discussion

The study examined the influence of adverse childhood experiences on academic performance of 300 level nursing students in Federal University Otuoke, Bayelsa State, Nigeria. indicate a significant prevalence of ACEs among nursing students. Specifically, verbal abuse was the most common ACE reported (88%), followed by physical abuse (15%), living with an alcoholic/drug-addicted family member (11%), and physical neglect (11%). These results align with previous studies highlighting the widespread nature of ACEs among healthcare professionals (Ilochi, et al., 2024; Hughes et al., 2017). There was also a profound influence of ACEs on nursing students' academic performance, including reduced motivation and engagement (89%), negative impact on focus (85%), and impeded relationships with peers and teachers (94%). These findings are consistent with research demonstrating the detrimental effects of ACEs on cognitive and emotional development (Houchens et al., 2020; Lee et al., 2022). Further findings from this study identified peer support groups (85%), counseling services (66%), tutoring/academic coaching (66%), and mindfulness practices (66%) as highly effective interventions. This supports existing literature emphasizing the importance of social support, mental health services, and academic accommodations in mitigating the effects of ACEs (Brewer et al., 2019; Goldstein et al., 2020). In Nursing education, integrating trauma-informed care training into curricula is crucial to prepare students to care for patients with adverse childhood experiences (ACEs) (Ademola, et al., 2024). Early identification and support strategies are also vital to promote academic success among students with ACEs (Ademola, et al., 2025). In clinical practice, implementing trauma-informed care principles, screening for ACEs, and providing patient-centered care are essential. Interdisciplinary collaboration with mental health professionals is necessary to address ACE-related challenges.

From a research perspective, conducting longitudinal studies on the impact of ACEs on nursing students' career development and evaluating interventions to support students with ACEs are critical. At the policy level, developing ACE-aware healthcare systems, increasing funding for ACE-related research and education, and implementing policy changes addressing ACE-related disparities are necessary.

Adverse childhood experiences (ACEs) are potentially traumatic events that occur in childhood (0-17 years) such as experiencing violence, abuse, or neglect; witnessing violence in the home,

and having a family member attempt or die by suicide. Also included are aspects of the child's environment that can undermine their sense of safety, stability, and bonding such as growing up in a household with substance misuse, mental health problems, or instability due to parental separation or incarceration of a parent, sibling, or other member of the household (CDC, 2019).

Conclusion

In conclusion, this study reveals the profound impact of Adverse Childhood Experiences (ACE) on individuals, affecting their emotional, physical, and social well-being. Targeted interventions, supportive relationships, and community resources can mitigate these effects. By addressing ACE, we can transform childhood trauma into stories of hope and resilience, illuminating a brighter future for generations to come.

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