



Mental Health Status and Associated Risk Factors Among In-School Adolescents in a Rural Community in Rivers State, Nigeria

Oku AO^{1,2}, Fajola A², Alali A^{2,3}, Obiagwu PN^{2,4}, Ogunlaja OA^{2,5}, Ebaretonbofa F², Utomi F², Adetula B², Gabriel O², Ejiogu M², Osuegbu O², Japhaet S², Ohio O²

¹Department of Community Medicine, University of Calabar, Calabar, Cross River State

²Department of Community Health, Renaissance Africa Energy Company

³Department of Community Medicine, Rivers State University

⁴Department of Pediatrics, Bayero University, Kano, Kano State

⁵Department of Obstetrics and Gynaecology, Bowen University, Iwo, Osun State

Abstract

Context: Globally, the mental health of adolescents is a significant public health issue preventing many adolescents from reaching their full potential. Several socio-economic, cultural, and systemic factors make adolescents, especially in Nigeria, vulnerable.

Aim: The study was therefore conducted to assess the mental health status and identify risk factors of in-school adolescents in Community Secondary school Edagberi, Ahoada West, Rivers State, Nigeria.

Materials and Methods: A cross-sectional descriptive study among 231 in-school adolescents in Edagberi Better Land community of Rivers State was conducted. Community Secondary school Edagberi is one of the Renaissance Africa Energy Company, formerly Shell Petroleum Development Company supported schools with a recently commissioned Sick Bay and Water, Sanitation and Hygiene (WASH) facilities. A self-administered questionnaire including the General Health Questionnaire 12 (GHQ12) was used to elicit information from the respondents. Data were summarized using proportions, and X² test was used to explore associations between categorical variables. Level of significance was set at $p < 0.05$.

Results: The mean age of the respondents was 14.4 ± 2.13 years, 58.4% were females, 55.0% were from junior class, and 78.8% resided with their parents. Based on the GHQ categorization, 69(29.9%) had traits of poor mental health status, compared to 70.1% with good mental health status. Some commonly reported stressors by the students were trekking long distances to school (54.1%), high transportation costs (51.9%) and family problems (49.9%). Predictors of poor mental health status in our study were low self-image /esteem (OR 2.19; 95% CI 1.16 -4.16) and polygamous family type (OR 1.95; 95% CI 1.24 -3.65) ($p < 0.05$)

Conclusion: With a little over a quarter (29.9%) of adolescents with traits of poor mental health, provision of age-appropriate mental health services is strongly recommended to be incorporated in the school Health programme, particularly targeting students with low self-esteem and anxiety issues.

Key Words – Mental Health, adolescents, psychological distress, GHQ 12, Nigeria.

Introduction

Adolescence represents a critical developmental stage marked by rapid biological, cognitive, and social

Corresponding Author:

Oku, Afiong O

Department of Community Medicine, University of Calabar,
Cross River State, Nigeria.

afyokuene@gmail.com

DOI: 10.61386/imj.v19i2.1061

transitions that can significantly influence mental health trajectories. During this period, young people experience heightened vulnerability to mental health conditions due to increased academic pressures, shifting social dynamics, emerging identity formation, and exposure to environmental stressors. Globally, mental health disorders constitute a

substantial portion of the disease burden among adolescents, with depression, anxiety, and behavioural disorders among the leading contributors to disability-adjusted life years. Additionally, the adolescent period is critical for developing social and emotional habits crucial for mental well-being, such as adopting healthy sleep patterns, exercising regularly, developing coping, problem-solving, and interpersonal skills, and learning to manage emotions.^{1,2} Protective and supportive environments in the family, at school and in the wider community are critical for adolescents well-being.³

Recent global estimates indicate that one in seven (14.3%) adolescents aged 10–19 experienced a mental health condition, yet the majority of these cases remain untreated due to stigma, limited access to care, and insufficient integration of mental health services into primary health systems.^{4,5} It is also reported that adolescents contribute to 45% of the global burden of diseases associated with mental health-related disorders.^{2,6} The onset of mental health problems during adolescence is particularly concerning, as nearly half of all mental health disorders begin before age 14, often persisting into adulthood if not adequately addressed.⁷ Untreated adolescent mental health conditions are associated with profound short and long-term consequences, including impaired academic performance, social isolation, substance use, self-harm, and increased risk of suicide—currently one of the leading causes of death among young people globally.⁴

In Nigeria, several studies reported that the prevalence of poor mental health or psychological distress among adolescents ranged from as low as 15% to as high as 50%.^{2,8-10} Adolescent mental health in Nigeria is shaped by a complex interaction of socio-economic, family, cultural, school, and individual factors.^{11,12}

Several factors contribute to poor mental health during adolescence, including exposure to adversity, peer pressure and exploration of identity. Adolescents residing in low-income households and remote communities often experience chronic stress and limited access to basic resources, both of which are associated with increased risk of depression and anxiety.^{13,14} Dysfunctional family dynamics, harsh parenting, and parental absence have been associated with increased emotional and behavioural disorders.^{15,16} Regarding in-school adolescents, the

school environment serves as both a potential risk and protective setting, depending on levels of support and safety. School-related stressors such as academic pressure, overcrowded classrooms and bullying have contributed significantly to poor mental health.^{10,14,17} Additionally, peer rejection, poor coping skills and personality traits have been linked to depression, anxiety, and suicidal ideation among Nigerian adolescents.¹⁸

Given the significant and lasting impact of adolescent mental health on individual well-being and societal development, there is an urgent need for evidence-based, culturally sensitive, and accessible mental health interventions. Our study, therefore, aims to determine the prevalence and identify predictors of poor mental health status among in-school adolescents in a rural community in Rivers State.

Methodology

Study Design:

This cross-sectional descriptive study was conducted among 231 in-school adolescents in Edagberi Betterland community, Ahoada West Local Government Area, Rivers State.

Study Setting

Community Secondary School (CSS) Edagberi Betterland is a day school located in Ahoada West Local Government of Rivers State. The school was established in August 2022, has a student population of 590, and is supported by 40 teaching and 11 non-teaching staff. The school benefits from Renaissance Africa Energy Company's (formerly Shell Petroleum Development Company) corporate social responsibility initiative, including a school sick bay, a water treatment plant, and Water, Sanitation and Hygiene (WASH) facilities commissioned in June 2025. A School Health Club was launched in 2023, alongside health education programmes.

Study Population

All consenting students present during the commissioning of the school's Sick bay and WASH facilities were eligible to participate.

Sample size calculation

The Cochran's formula for a single proportion was used, yielding a minimum sample size of approximately 250.

Eligibility criteria

Inclusion: Students aged 10-19 years who provided assent and whose parents/guardians consented while students who attained 18 years and above provided consent before being recruited into the study.

Exclusion: Students absent from school on the study days, SSS3 students who had completed examinations and stopped attending school, and those acutely ill were excluded from the study.

Sampling Technique – All students who met the inclusion criteria were consecutively recruited into the study until the required sample size was attained. As at the time of the study, some of the SSS3 students had just finished their examinations and were absent from school. Proportionate allocation was applied to the classes to ensure adequate representation of each class.

Data Collection

A semi-structured, self-administered questionnaire including the General Health Questionnaire 12 (GHQ 12) was employed to elicit information from the respondents. It comprised of the following sections:

- Section A: Socio-demographic characteristics
- Section B: Perceived stress and Stressors
- Section C: Mental Health Assessment
- Section D: Factors influencing Mental Health

Five trained research assistants supported questionnaire administration. Students completed questionnaires confidentially without peer discussion.

Data Management:

Questionnaires were inspected daily to detect errors and omissions to ensure that they were properly filled. Questionnaires were manually sorted out, coded before entry, and cleaned. Thereafter, the data were entered into a computer for statistical analysis using Statistical Package for the Social Sciences (SPSS) version 26.0. Descriptive statistics summarised the variables into mean and standard deviation for normally distributed and median and inter quartile range for non normally distributed data. Chi-square tests assessed associations between categorical variables, and binary logistic regression identified independent predictors of poor Mental Health. The level of significance was kept at 5%. The

GHQ is a self-administered questionnaire designed to detect psychiatric disorders in community and other settings such as primary care. The GHQ-12 was chosen because it has been validated for use in this environment and is short and easy to complete, containing only 12 items. The standard GHQ method of scoring 0–0–1–1 for each item was employed, which allows a maximum score of 12. A cut-off point of 3 for GHQ 12 has been used successfully in this environment and those with a GHQ score of 3 and above suggest poor mental health status while a score <3 represented good mental health

Ethical consideration

Ethical approval was obtained from the Rivers State Ethical Review Committee. Parental consent and student assent were obtained from the respondents. For students aged 18 years and above, provided consent before being recruited into the study. Participants experiencing distress received counselling.

Results

The study included 231 in-school adolescents. The mean age was 14.4 ± 2.13 years, most ($n = 133$, 57.6%) were aged 10-14 years, 135 (58.4%) female and in the Junior secondary one class 52(22.5%). A

Table 1: Socio-demographic profile of respondents

Variable	Frequency(n=231)	Percentage
Age (years)		
10-14	133	57.6
15-19	96	41.6
> 20	2	0.8
Mean \pm SD	14.4 \pm 2.13	
Sex		
Male	96	41.6
Female	135	58.4
Level of study		
JSS1	52	22.5
JSS2	38	16.5
JSS3	37	16.0
SSS1	48	20.8
SSS2	31	13.4
SSS3	25	10.8
Religion		
Christianity	224	97.0
Islam	4	1.7
Traditional	3	1.3
Marital status		
Single	50	21.6
Married	120	51.9
Divorced	14	6.1
Separated	27	11.7
Widowed	20	8.7
Family Type		
Monogamous	161	69.7
Polygamous	70	30.3
Perceived Schooling as stressful		
Yes	50	21.6
No	181	78.4
Ever engaged in Sexual activity		
Yes	33	14.3
No	198	85.7

majority lived with their parents (n = 182, 78.8%) and identified as Christians (n = 224, 97.0%) (Table1). Regarding their parents, a higher proportion were married 120(51.9%), in a monogamous relationship 161(69.7%). However, less than a quarter of the students perceived their schooling as stressful 50(21.6%) and engaged in sexual activities 33(14.3%).

Some commonly identified stressors affecting the students' well-being were trekking long distances to school 54.1%,

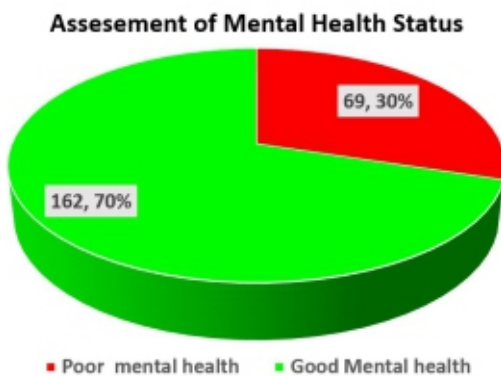


Figure 2: Assessment of Mental Health Status of In-school adolescents in Edagberi using GHQ12

Table 2: Responses of the General Health Questionnaire (GHQ 12)

Question	Better/ same as usual Frequency (%)	Less /Much Less than usual Frequency (%)
Been able to concentrate on what you are doing	180(77.9%)	51(22.1%)
Lost much sleep over worry	193(83.5%)	38(16.5%)
Felt constantly under strain	196(84.8%)	35 (15.2%)
Felt you couldn't overcome your difficulties	176(76.2%)	55 (23.8%)
Been feeling unhappy and depressed	187(81.0%)	44 (19.0%)
Been losing confidence in your self	182(78.8%)	49 (21.2%)
Been thinking of yourself as a worthless person	188(81.4%)	43 (18.6%)
Felt you were playing a useful part in things	172(74.5)	59(25.5%)
Felt capable of making decisions about things	183(79.2)	48(20.8%)
Been able to enjoy your normal day - to day activities.	177(76.6%)	54(23.4%)
Been able to face up to your problems	170(73.6%)	61(26.4%)
Been feeling reasonably happy all things considered	180(77.9%)	51(22.1%)

Table 3: Association between Socio- demographic variables and Mental Health Status In-school Adolescents in CSS Edagberi

Variable	Mental Health Status		Chi Square test	P-value
	Good Frequency (%)	Poor Frequency (%)		
Sex				
Male	69(71.9)	27(28.1)	0.24	0.63
Female	93(68.9)	42(31.1)		
Class				
Junior secondary	93(73.2)	34(26.8)	1.29	0.31
Senior secondary	69(66.3)	35(33.7)		
Age (years)				
≤ 14	99(74.4)	34(25.6)	2.78	0.096
>14	63(64.3)	35(35.7)		
Family Type				
Monogamous	120(74.5)	41(25.5)	4.92	*0.027
Polygamous	42(60.0)	28(40.0)		
Marital status (Parents)				
Currently Unmarried	72(64.9)	39(35.1)	2.83	0.093
Married	90(75.0)	30(25.0)		
Perceived school as stressful				
Yes	29(58.0)	21(42.0)	4.48	*0.034
No	133(73.5)	48(26.5)		
Engaged in Sexual activity				
Yes	18(54.5)	15(45.5)	4.46	*0.035
No	144(72.7)	54(27.3)		

*=significant p value

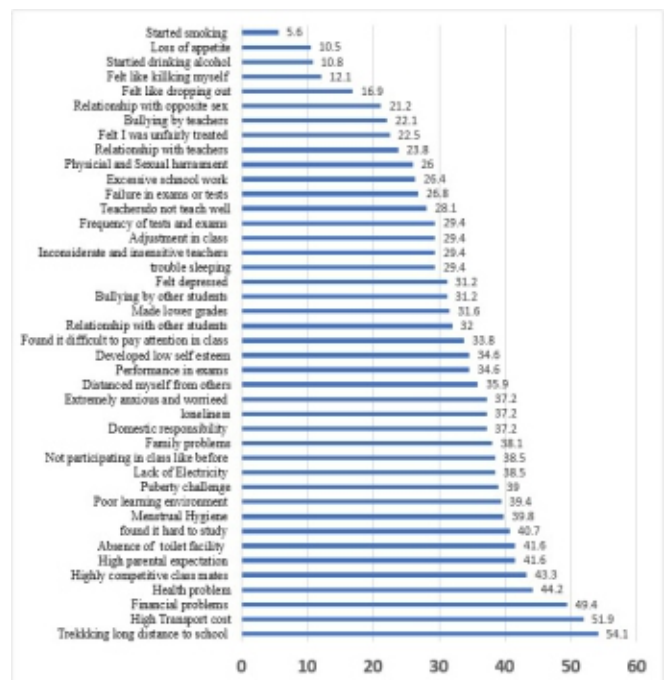


Figure 1: Perceived Stressors reported by respondents

high transportation costs 51.9%, financial problems 49.4%, health problems 44.2% and highly competitive peers 43.3% (Figure 1).

The responses of the General Health Questionnaire by the respondents are shown in Table 3. More of the responses of the GHQ were positive by most of the students. Most 196(84.8%) were not constantly under strain, did not lose much sleep over worry

Table 4: Association Between Perceived Stressors and Mental Health Status among in-school Adolescents in Rivers State

Variable	Mental Health Status		Chi Square test	P-value
	Good Frequency (%)	Poor Frequency (%)		
Family problems				
Yes	55(62.5)	33(37.5)	3.95	*0.04
No	107(74.8)	36(25.2)		
Felt depressed				
Yes	44(61.1)	28(38.9)	4.06	*0.04
No	118(74.2)	41(25.8)		
Found it difficult to study				
Yes	58(61.7)	36(38.3)	5.37	*0.02
No	104(75.9)	33(24.1)		
Reduced Class participation				
Yes	54 (60.7)	35(39.3)	6.18	*0.01
No	108(76.1)	34(23.9)		
Felt like dropping out of school				
Yes	22(56.4)	17(43.6)	4.23	*0.04
No	140(72.9)	52(27.1)		
Developed Low Self confidence				
Yes	43(53.8)	37(46.3)	15.68	* <0.001
No	119(78.8)	32(21.2)		
Extremely Anxious /worried				
Yes	48(55.8)	38(44.2)	13.40	* <0.001
No	114(78.6)	31(21.4)		

*significant p value

Table 5: Predictors of Poor Mental Health among in-school adolescents in CSS Edagberi

Variable	Odds Ratio	95% CI	P-value
Engaged in sexual activity			
Yes	1.21	0.52- 2.81	0.67
No	1		
Family type			
Polygamous	2.58	1.83-3.03	0.04*
Monogamous	1		
Perceived school as stressful			
Yes	1.46	0.71- 2.99	0.31
No	1		
Family problems			
Yes	0.73	0.38- 1.37	0.32
No	1		
Felt depressed			
Yes	1.04	0.52- 2.08	0.92
No	1		
Found it difficult to study			
Yes	1.05	0.50-2.24	0.89
No	1		
Reduced Class participation			
Yes	1.36	0.64-2.90	0.43
No	1		
Felt like dropping out of school			
Yes	1.37	0.72- 2.63	0.34
No	1		
Developed Low self-image/confidence			
Yes	2.19	1.16-4.16	0.02*
No	1		
Felt extremely anxious / worried			
Yes	1.91	1.01-3.65	0.05
No	1		

193(83.5%) and did not think of themselves as worthless 188 (81.4%). However, more students were unable to face up to their problems: 61(26.4%) felt they were not playing a useful part in things, 59(25.5%) and perceived that they could not overcome their difficulties, 55 (23.8%) (Table 2). Assessment of mental health (Figure 2) of the in-

school adolescents in CSS Edagberi using the GHQ12 revealed that 29.9% of respondents had traits of poor mental health.

The association between the socio-demographic characteristics/other variables and mental health status (Table 4) revealed on bivariate analysis that a significantly higher proportion of those who perceived their schooling as stressful, those from polygamous family settings and indulged in sexual activity were more likely to have traits of poor mental health ($p<0.05$). Also, some of the identified stressors linked to poor mental health were students who had family problems, felt depressed, reduced class participation, found it difficult to study, were extremely anxious, had low self-esteem and felt like dropping out of school ($p<0.05$) (Table 5). However, the only independent risk factors for poor mental health on binary logistic regression was perceived low self-esteem and being from a polygamous family setting. (Table 6)

Discussion

This study assessed the mental health status of in-school adolescents in Rivers State using the 12-item General Health Questionnaire (GHQ-12), a widely used and validated screening tool for detecting mental well-being in our setting.¹⁹ Based on the GHQ-12 categorization, 29.9% of respondents exhibited traits of poor mental health, indicating that nearly one in three adolescents in this population may be experiencing considerable psychological distress. This finding underscores the magnitude of adolescent mental health challenges in Rivers State and aligns with growing evidence that mental health problems are common among Nigerian adolescents.¹¹ This high rate may also be linked to the socioeconomically and environmentally complex area of the Niger Delta, making adolescents particularly vulnerable to mental health problems. The prevalence of psychological distress observed in this study is comparable to reports from other studies across Nigeria, with recorded rates ranging from

15% - 50% among adolescents^{1,9,20}. Additionally, studies among in-school adolescents in south-western and south-eastern Nigeria have reported prevalence rates of psychological distress ranging from approximately 25% to 35%, depending on the assessment tool and cut-off points used.²¹⁻²³ This rate of poor psychological well-being reported in Nigeria aligns with the global rate of 7.1% to 64%.²⁴

Furthermore, the inherent risks, impairing and disabling consequences of untreated mental health issues are not limited to adolescence but extend to limiting a vulnerable adolescent's mental wellbeing and opportunities to lead fulfilling lives in later adulthood.²⁵ This finding therefore underscores the need for routine mental health screening in schools and integration of psychosocial support into school health programmes.

Perceived low self-image or self-esteem was identified as a significant predictor of poor mental health status in this study, with affected adolescents being more than twice as likely to have poor mental health (OR 2.19; 95% CI 1.16–4.16). This finding is consistent with established psychological theories and empirical evidence that identify self-esteem as a critical determinant of emotional well-being during adolescence.^{26,27} Because the adolescent period is characterized by identity formation, heightened emotional sensitivity, and increased reliance on peer approval, negative self-perception is common. This has been strongly linked to symptoms of depression, anxiety, and general psychological distress.²⁶⁻²⁸ Low self-esteem in adolescents plays a central role in adaptive functioning marked by identity formation and socio-emotional sensitivity. Nigerian studies have similarly demonstrated that adolescents with poor self-concept or low self-esteem are more likely to report emotional and behavioural problems,^{27,29,30} reinforcing the importance of psychosocial interventions that promote positive self-image within school environments.

Family structure also emerged as a significant determinant of adolescent mental health in this study. Adolescents from polygamous family settings were almost twice as likely to exhibit poor mental health compared with those from monogamous families. This finding is consistent with earlier studies within and outside Nigeria that have reported poorer psychological outcomes among adolescents raised in a challenging family environment.^{13,15,16,31,32}

Polygamous family structures are often associated

with large family sizes, competition for parental attention, marital conflict, and unequal distribution of emotional and material resources, all of which may contribute to chronic stress and emotional insecurity in adolescents.^{30,32,33} Such family-level stressors may negatively influence coping capacity and psychological resilience, thereby increasing vulnerability to poor mental health.

Conclusions/Recommendations

Our study revealed that a little above a quarter of in-school adolescents (29.9%) had traits of poor mental health with low self-esteem and being from a polygamous family setting identified as risk factors of poor mental health. These findings underscore the need to integrate mental health into school health programmes and family-centered interventions that enhance self-esteem and family dynamics. Additionally, family strengthening programmes that foster improved communication, equitable parental involvement, and emotional support in polygamous households could help buffer adolescents from psychosocial stressors associated with complex family structures.

Limitations and Future Directions

Although our study contributes valuable data on predictors of adolescent mental health in a Nigerian setting, its cross-sectional design precludes causal inference. Longitudinal research could help clarify the temporal sequencing of self-esteem development and psychosocial outcomes, and explore moderators such as gender, socio-economic status, and social support. Furthermore, qualitative investigations may provide deeper insights into how adolescents from diverse family settings perceive and cope with emotional challenges.

Funding Sources: The study was self-funded.

Authors Contributions

OAO conceived, designed and coordinated the study, she carried out statistical analysis and drafted the manuscript; FA, AA, OPN, EF, and Ogunlaja O contributed by means of their competence and experience in reviewing the manuscript critically for its intellectual content and also participated in the conception and design of the study. AO, GO, EM Osegbu, O participated in the design of the study, questionnaire and critically reviewed the manuscript.

FU, UO, and JS read and reviewed the manuscript. All authors read and approved the final manuscript.

Conflict of Interest

None

References

1. Wada YH, Rajwani L, Anyam E, Karikari E, Njikizana M, Srour L, et al. Mental health in Nigeria: A Neglected issue in Public Health. *Public Health Pract (Oxf)*. 2021;2:100166.
2. Tinsae T, Shumet S, Takelle GM, Rtbey G, Melkam M, Andualem F, et al. The burden and its determinants of mental health distress among adolescents dwelling in Africa: a systematic review and meta-analysis. *Child and Adolescent Psychiatry and Mental Health*. 2024;18(1):90.
3. WHO. Mental health of adolescents 2025 26/1/25.
4. WHO. Adolescent Mental Health. Geneva WHO; 2021.
5. United Nations, Children's, Fund. The State of the World's Children 2021: On My Mind – Promoting, Protecting and Caring for Children's Mental Health. New York; 2021 October 2021.
6. Wu S-N, Liu R, Chen L, Wang S-P, Chen X-D, Qin D-Y, et al. Global burden of early-onset mental disorders in adolescents and young adults: a systematic analysis based on the Global Burden of Disease study 2021. *BMC Psychiatry*. 2025;25(1):1136.
7. Kessler RC, Berglund P, Demler O, Jin R, Merikangas KR, Walters EE. Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Arch Gen Psychiatry*. 2005;62(6):593-602.
8. Mohammed A, Mohammed N, Rasaki A, Oyedun R, Gadzama BN, Okoh EO. Pattern of anxiety, depression, and suicidality among in-school adolescents in Bauchi, North-East Nigeria. *International Journal Of Community Medicine And Public Health*. 2024;11(9):3342-7.
9. Oderinde KO, Dada MU, Ogun OC, Awunor NS, Kundi BM, Ahmed HK, et al. Prevalence and Predictors of Depression among Adolescents in Ido Ekiti, South West Nigeria. *International Journal of Clinical Medicine*. 2018;9(3):187-202.
10. Ogunlade SB, Abioye AI, Kuyebi MA, Musa J, Abubakar AK, Yisa MN, et al. Prevalence of psychiatric disorders among children and adolescents in Nigeria since 2010: A systematic review and meta-analysis. *medRxiv*. 2025:2025.02.22.25322718.
11. Akinrinde D, Ayeni S, Akande D, Adegbite A. Exploring Common Mental Health Problems among Nigerian Adolescents: Identified Challenges and Recommendations for the Future. Center for Policy Impact in Global Health 2024.
12. Adewuya AO, Ologun YA. Factors Associated with Depressive Symptoms in Nigerian Adolescents. *Journal of Adolescent Health*. 2006;39(1):105-10.
13. Atilola O, Ayinde OO, Emedoh CT, Oladimeji O. State of the Nigerian child - neglect of child and adolescent mental health: a review. *Paediatr Int Child Health*. 2015;35(2):135-43.
14. Fatiregun AA, Kumapayi TE. Prevalence and correlates of depressive symptoms among in-school adolescents in a rural district in southwest Nigeria. *Journal of Adolescence*. 2014;37(2):197-203.
15. Kganyago Mphaphuli LK. The Impact of Dysfunctional Families on the Mental Health of Children. In: Silva T, editor. *Parenting in Modern Societies*. London: IntechOpen; 2023.
16. Nwachukwu CE, Akingbade AE, Olufunmilayo EO, Oyebamiji TA, Odefemi OF, Ikunne BN, et al. Family Characteristics and Mental Health Status of Secondary School Students in a Rural Community in Southwest Nigeria. *International Journal of Mental Health and Addiction*. 2022;20(3):1325-35.
17. Alinnor E, Okefor C. Depression and Associated Factors Among in-School Adolescents in Nigeria. *Asian Journal of Social Health and Behavior*. 2023;6:14.
18. Aluede O, Adeleke F, Omoike D, Afen-Akpa J. A review of the extent, nature, characteristics and effects of bullying behaviour in schools. *Journal of Instructional Psychology*. 2008;35:151-8.
19. Goldberg DP, Williams P. A user's guide to the General Health Questionnaire. NFER-Nelson. 1988.
20. Akanni OO, Otakpor AN. Psychological distress

- and resilience: a study of prevalence and association among school-attending adolescents in Benin-City. *Sri Lanka Journal of Psychiatry*. 2016;7(1):18.
21. Adewuya A, Ola BA, Aloba O, Oginni O. Depression amongst Nigerian university students. Prevalence and sociodemographic correlates. *Social psychiatry and psychiatric epidemiology*. 2006;41:674-8.
 22. Anyanwu MU. Psychological distress in adolescents: prevalence and its relation to high-risk behaviors among secondary school students in Mbarara Municipality, Uganda. *BMC Psychology*. 2023;11(1):5.
 23. Omigbodun O, Dogra N, Esan O, Adedokun B. Prevalence and correlates of suicidal behaviour among adolescents in southwest Nigeria. *Int J Soc Psychiatry*. 2008;54(1):34-46.
 24. Méndez J, Sánchez-Hernández Ó, Garber J, Espada JP, Orgilés M. Psychological Treatments for Depression in Adolescents: More Than Three Decades Later. *Int J Environ Res Public Health*. 2021;18(9).
 25. Clayborne ZM, Varin M, Colman I. Systematic Review and Meta-Analysis: Adolescent Depression and Long-Term Psychosocial Outcomes. *J Am Acad Child Adolesc Psychiatry*. 2019;58(1):72-9.
 26. Fagbohun AO, Orimadegun A, Akinyinka OO. A comparative study of self-esteem in secondary school adolescents in urban and rural settings of Oyo State, Nigeria. *Rural and Remote Health*. 2025;25(3):1-9.
 27. Okwaraji FE, Aguwa EN, Shiweobi-Eze C. Life satisfaction, self-esteem and depression in a sample of Nigerian adolescents. *International Neuropsychiatric disease journal*. 2016;5(3):1-8.
 28. Masselink M, Van Roekel E, Oldehinkel AJ. Self-esteem in Early Adolescence as Predictor of Depressive Symptoms in Late Adolescence and Early Adulthood: The Mediating Role of Motivational and Social Factors. *J Youth Adolesc*. 2018;47(5):932-46.
 29. Lawrence KC, Adebawale TA. Adolescence dropout risk predictors: Family structure, mental health, and self-esteem. *Journal of Community Psychology*. 2023;51(1):120-36.
 30. Edet B, Essien E, Eleazu F, Abang R, Ochijele E, Daniel F. The Relative Role of Family Affluence and Social Support on Depression and Self-Esteem among Adolescents in Nigeria: a Cross-Sectional Study. *Acta Med Acad*. 2023;52(3):201-11.
 31. Demetriou C. Family Functioning and Adolescents' Mental Health Problems: A Mixed-methods Analysis of Community and Clinical Samples. *International Journal of Developmental Science*. 2025;19(1-2):5-15.
 32. Ede MO, Eze NE, Ononaiwu AI, Ugwu A. Family Types and Psychosocial Behaviours of In-school adolescents in Enugu State, Nigeria. *Journal of the Nigerian Council of Educational Psychologists*. 2020;13(1).
 33. Mulenga J, Ndung'u E, Chege A. Family Structure and Adolescent Wellbeing: A Comparative Study of Polygamous and Monogamous Households in Chulungoma Village, Zambia. *International Journal OF Research and Innovation in Social Science (IJRISS)*. 2025;9(8):3707-17.