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# Gender and Geographical Variation in the Prevalence and Correlates of Depressive and Anxiety Symptoms Among Adolescents in Nigeria

Mental health problems, particularly depression and anxiety are a leading cause of disability among adolescents impacting their ability to function in various aspects of their life. In Nigeria, these mental health problems are exacerbated by factors such as socioeconomic instability and violence, which can vary by location and gender. Despite this growing concern, there is a gap in research on how gender and geographical differences influence the prevalence of depression and anxiety in adolescents in Nigeria. This study explores the prevalence and correlates of depression and anxiety in adolescents in Nigeria with a focus on identifying variations across gender and regions.

## Methods

This study utilized data from round 6 of the 2021 Nigeria Multiple Indicator Cluster Survey (MICS). The analysis included 12,307 adolescents aged 10–17 years from all geopolitical zones in Nigeria. The outcome variables were depressive and anxiety symptoms. Depressive and anxiety symptoms were assessed using caregiverreported frequency regarding how often the child appeared sad/depressed and very anxious/nervous/worried, respectively. Explanatory variables included age, gender, education level, mother's education, ethnicity, wealth quintile, area of residence, and geopolitical zone. Multinomial logistic regression modelling was utilized to identify the predictors of depressive and anxiety symptoms as well as their variations by gender and geographic region. Additionally, ArcGIS 10.8.1 software was employed to visualize the variation in the prevalence of depressive and anxiety symptoms among adolescents across the six geopolitical zones in Nigeria.

### Preliminary Results

Among the participants, 18% experienced depressive symptoms daily or weekly, while 20% experienced anxiety symptoms. For anxiety symptoms, 20.2% of girls experienced symptoms daily or weekly each year, compared to 20.7% of boys (X=0.879, P=0.644). For depressive symptoms, 18.2% of girls experienced depressive symptoms daily or weekly each year, while 18.0% of boys did (X=0.275, P=0.871). The percentage of adolescents who reported experiencing depressive symptoms daily or weekly a year was highest (6.2%) in the Northwest geopolitical zone. For anxiety symptoms, the percentage of adolescents who reported experiencing anxiety symptoms daily or weekly a year was also highest (6.4%) in the Northwest geopolitical zone. Adolescent girls residing in the Southeast were twice as likely to experience daily or weekly anxiety symptoms compared to their counterparts in the North Central region (RRR = 1.85, 95% CI: 1.42-2.42, p < 0.001). Conversely, adolescent girls in the Southwest (RRR = 0.12, 95% CI: 0.08-0.17, p < 0.001) and South South (RRR = 0.56, 95% CI: 0.08-0.17, p < 0.001) 0.43-0.72, p < 0.001) had lower risks of daily or weekly anxiety symptoms compared to those in the North Central region. For boys, residing in the South East was associated with higher likelihood in the risk of experiencing anxiety symptoms daily or weekly (RRR = 2.12, 95% CI: 1.64-2.72, p < 0.001), while living in the South West (RRR = 0.15, 95% CI: 0.11-0.20, p < 0.001) or South South (RRR = 0.74, 95% CI: 0.58-0.96, p = 0.022) was associated with lower risk. Additionally, for both male and female, living in the rural areas increased the odds of experiencing anxiety symptoms daily and weekly: females (RRR = 1.43, 95% CI: 1.23-1.67, p < 0.001) and males (RRR = 1.46, 95% CI: 1.25-1.69, p < 0.001).

### Conclusion

This study shows about 20% of adolescents in Nigeria experience depressive and anxiety symptoms at least weekly or daily with notable variations across gender and geographical regions. The prevalence of depressive and anxiety symptoms is similar in both adolescent girls and boys with particularly high rates observed in the Northwest region. Factors such as lower maternal education and household wealth, as well as living in rural areas, contribute to increased vulnerability to these mental health problems. Understanding these dynamics is crucial for developing targeted interventions and policies that address the specific needs of adolescents in

Nigeria taking into account gender and geographical location with the goal of promoting the their overall well-being.

Keywords

Adolescent mental health, depression, anxiety, gender disparities, geographical variation

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