

Statistical Analysis Of Causal Factors Influential Eating Disorders Among Adolescents In Osun State, Nigeria

Atinuke Abidemi ADENIJI

Sefiu Adebowale ADEWUMI

Adekunle Mudasiru ADEYEMI

Bukola Olayemi AKIN-AWONIRAN

Department of Mathematics & Statistics, Faculty of Pure and Applied Sciences,
Osun State College of Technology, Esa-oke, Nigeria

Abstract: This study titled "Statistical Analysis of Causal Factors Influential Eating Disorders Among Adolescents in Osun State, Nigeria" aimed to examine the socio-cultural, psychological, economic, and media-related factors contributing to eating disorders among adolescents. A total of 1,500 adolescents aged 12–18 years were sampled across all 30 Local Government Areas (LGAs) using stratified random sampling. Quantitative data were analyzed using SPSS and R software, including logistic regression and chi-square tests, while spatial mapping and thematic analysis were also applied. Results showed high prevalence of psychological factors such as low self-esteem (65.9%), depression (61.7%), and media influence (62.8%). However, logistic regression revealed no statistically significant predictors ($p > 0.05$). Gender showed no significant association with awareness ($\chi^2 = 0.902, p = 0.342$), and spatial analysis identified urban LGAs like Osogbo and Ife Central as high-risk zones. Qualitative findings confirmed the role of peer pressure, body image expectations, and media. The study concluded that disordered eating behaviors are multifactorial. It recommends mental health education, media literacy, and community interventions in high-risk LGAs to mitigate adolescent eating disorders and promote early detection and prevention strategies.

Keywords: Eating disorders, Adolescents, Socio-cultural factors, Psychological triggers, Gender.

I. INTRODUCTION

Eating disorders (EDs) are increasingly recognized as a significant global public health challenge, characterized by severe disturbances in eating behaviors, thoughts, and emotions (Koglin *et al.*, 2021). While traditionally associated with Western cultures, recent evidence indicates a growing prevalence in diverse cultural contexts, including Nigeria (Adebimpe *et al.*, 2021). Adolescence, a period of rapid physical, psychological, and social development, is particularly vulnerable to the onset and perpetuation of EDs due to factors such as evolving body image perceptions, peer pressure, and the search for identity (Akinrinoye *et al.*, 2023).

Eating disorders are classified as psychiatric conditions marked by disordered eating habits or extreme behaviors

related to weight control, both of which can result in serious health complications (Treasure *et al.*, 2020). These conditions encompass anorexia nervosa, bulimia nervosa, binge eating disorder, and other specified feeding or eating disorders (American Psychiatric Association, 2022; World Health Organization, 2023). Diagnostic criteria and symptom severity are detailed in key medical guidelines such as the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) and the International Classification of Diseases, 11th Revision (ICD-11) (American Psychiatric Association, 2022; World Health Organization, 2023).

Globally, these disorders have been acknowledged within the broader context of mental health burdens, as demonstrated in the Global Burden of Disease Study 2019, which underscores their growing prevalence—especially among

youth in middle- and high-income nations over the past five decades (GBD 2019 Mental Disorders Collaborators, 2022; Treasure *et al.*, 2020). Notably, eating disorders are among the deadliest mental health conditions, contributing to significant years of life lost and mortality rates. For example, in 2019 alone, they accounted for over 17,000 years of life lost and more than 300 deaths worldwide (GBD 2019 Mental Disorders Collaborators, 2022). Additionally, research highlights their strong association with elevated risks of all-cause and suicide mortality (Chesney *et al.*, 2014).

In Nigeria, traditional body ideals are often contrasted with increasingly pervasive global media influences and beauty standards, creating significant psychological pressure on adolescents (Akinrinoye *et al.*, 2023; Okoro *et al.*, 2014). Existing research on the prevalence and, more crucially, the underlying causal factors of eating disorders among Nigerian adolescents is limited. This knowledge gap hinders the development of culturally sensitive and effective prevention and intervention strategies. For instance, a recent study in a Nigerian university found that a high risk of EDs was significantly correlated with perceived stress and body image perception among pharmacy students (Oluwatosin *et al.*, 2025). Another study in Ibadan highlighted that chronic illness, peer pressure, parental concern about body image, and recent major life events were independently associated with disordered eating behaviors and feeding and eating disorders among schooling adolescents (Akinrinoye *et al.*, 2023).

Adolescence is a critical period of development, characterized by significant physical, emotional, and social changes (Harris, 2016). During this stage, individuals are vulnerable to various influences, including sociocultural, psychological, and biological factors, which can contribute to the development of eating disorders (Slater & Tiggemann, 2015). Sociocultural factors, such as media representation and peer pressure, play a significant role in shaping body image and eating behaviors among adolescents (Thompson *et al.*, 2016). The media perpetuates unrealistic beauty standards, leading to body dissatisfaction and negative self-image (Slater & Tiggemann, 2015). Peer pressure also contributes to disordered eating behaviors, as adolescents may engage in unhealthy eating habits to fit in with their peers (Harris, 2016).

Psychological factors, such as low self-esteem, anxiety, and depression, also contribute to the development of eating disorders among adolescents (Stice *et al.*, 2013). Individuals with low self-esteem may use disordered eating behaviors as a coping mechanism for emotional distress (Harris, 2016). Biological factors, such as genetics and hormonal changes, also play a role in the development of eating disorders (Klump *et al.*, 2016). Genetic predisposition can increase the risk of developing an eating disorder, while hormonal changes during adolescence can lead to body image concerns and disordered eating behaviors (Harris, 2016).

Eating disorders have become increasingly common among adolescents, driven by social media influence, peer pressure, and changing beauty ideals (Nagata *et al.*, 2020). These conditions, including restrictive eating and binge behaviors, often begin in early adolescence and are associated with anxiety, depression, and poor academic performance (Austin *et al.*, 2017). Timely screening and intervention are

critical for reducing long-term mental and physical health risks in youth.

Osun State has witnessed a rising trend of eating disorders among adolescents, which has become a concern for parents, educators, and healthcare professionals (Ogden *et al.*, 2016). Despite the growing concern, there is a lack of understanding of the influential factors contributing to eating disorders among adolescents in this community. Eating disorders are complex mental health conditions characterized by irregular eating habits and severe distress about body weight or shape. Among adolescents, these disorders can be particularly damaging due to the critical developmental stage they are undergoing. In Osun State, there has been a noticeable rise in concerns related to eating behaviors among youth, reflecting broader global trends. This increase could be influenced by various local factors, including cultural norms, socio-economic conditions, and exposure to media. Understanding the specific factors affecting eating disorders in this context is crucial for developing effective interventions and support systems.

Statement of the Problem: The prevalence of eating disorders among adolescents in Osun State has become a growing concern, with many cases potentially going unnoticed or untreated. There is a lack of comprehensive research into the specific factors influencing these disorders in this community, which hinders the development of targeted interventions. This study seeks to address the gap in understanding by investigating the socio-cultural, economic, and psychological factors that contribute to eating disorders among adolescents in Osun State, Nigeria.

II. AIM AND OBJECTIVES OF THE STUDY

This study is aimed to investigate the influential factors of eating disorders among adolescents in the Osun State, and to provide insights that can inform effective interventions.

The specific objectives are to:

- ✓ identify the socio-cultural factors contributing to eating disorders among adolescents in Osun State.
- ✓ examine the economic conditions and their impact on eating behaviors in this demographic.
- ✓ analyze the role of psychological factors, including body image and self-esteem, in the prevalence of eating disorders.
- ✓ explore the influence of media and peer pressure on eating habits among adolescents in Osun State.

III. MATERIALS AND METHODS

A. INTRODUCTION

This section outlines the methodology that was employed to investigate the influential factors of eating disorders among adolescents across all thirty local government areas (LGAs) in Osun State, Nigeria. A quantitative approach, complemented by qualitative insights, was adopted to achieve the study objectives. The research examined socio-cultural, economic, and psychological factors, along with the role of media and

peer pressure, to provide a comprehensive understanding of the factors contributing to eating disorders within this diverse demographic.

B. SAMPLE SIZE AND SAMPLING TECHNIQUE

The study targeted a sample of 50 adolescents aged 12 to 18 years from each of the thirty LGAs in Osun State, resulting in a total sample size of 1,500 adolescents. This large sample size ensured robust statistical power and improved generalizability of the findings across the state. A multi-stage stratified random sampling technique was used. The thirty LGAs served as the primary strata. Within each LGA, secondary strata were formed based on age groups (12–14, 15–16, 17–18) and gender. Participants were then randomly selected within each stratum.

C. SOURCE OF DATA

Primary data were sourced directly from adolescents residing in the thirty LGAs of Osun State. Data were collected using structured questionnaires that captured information on eating behaviors, body image perception, socio-economic status, and psychological factors. Secondary data were obtained from relevant literature, reports from national and international health organizations, and demographic statistics pertaining to Osun State.

D. METHOD OF DATA COLLECTION

- ✓ *Questionnaires:* Structured questionnaires served as the primary instrument for data collection. These were designed to align with the study objectives and included sections on socio-cultural factors, economic conditions, psychological aspects, and media/peer influence. The questionnaires primarily featured closed-ended questions for quantitative analysis, with a few open-ended questions included for additional context.
- ✓ *Focus Group Discussions:* To gain deeper qualitative insights, focus group discussions (FGDs) were optionally conducted in a selected subset of LGAs. Participants for the FGDs were drawn from the adolescent sample to ensure diversity. These discussions explored themes that emerged from the quantitative data and provided richer contextual understanding.
- ✓ *Data Collectors Training:* Data collectors from each LGA were trained on the research instruments and ethical considerations to ensure consistent and responsible data collection practices.

E. MODEL FOR THE ANALYSIS

- ✓ *Quantitative Analysis:* Quantitative data collected via the questionnaires were analyzed using statistical methods. Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to summarize the data. Inferential statistics—including logistic regression, chi-square tests, and odds ratios—were employed to identify relationships between socio-

demographic, economic, and psychological factors and the indicators of eating disorders

- ✓ *Qualitative Analysis:* Data obtained from FGDs were analyzed using thematic analysis. This involved transcribing the discussions, coding responses into themes and categories, and identifying patterns related to the study's objectives.
- ✓ *Triangulation:* Where applicable, triangulation was applied by comparing results from both quantitative and qualitative data sources. This approach enhanced the reliability and validity of the findings and allowed for a more comprehensive understanding of the influencing factors.
- ✓ *Spatial Analysis:* If geographical data were collected, spatial analysis was carried out to examine the distribution of eating disorder indicators across the thirty LGAs. This helped reveal regional variations in prevalence and influencing factors.
- ✓ *Statistical Software:* The data were analyzed using SPSS (Statistical Package for the Social Sciences) for descriptive and inferential statistics and R software was also utilized for advanced statistical modeling and spatial analysis where applicable.

F. RESEARCH TOOLS USED FOR THE ANALYSES

- ✓ *Statistical Software:*
 - *SPSS (Statistical Package for the Social Sciences):* This software was used to conduct descriptive and inferential statistical analyses.
 - *R (Statistical Computing Software):* R was employed for advanced statistical modeling and spatial analysis, where applicable.
- ✓ *Questionnaire:* Structured questionnaires were used to collect quantitative data on socio-cultural, economic, and psychological factors, as well as media and peer influences. The questionnaires consisted primarily of closed-ended questions, with a few open-ended items to capture supplementary insights.
- ✓ *Focus Group Discussion Guide:* A semi-structured discussion guide was developed and used during focus group discussions. It consisted of a set of open-ended questions aimed at eliciting detailed responses from adolescents. The guide ensured consistency across FGDs while allowing flexibility for participants to share diverse perspectives.
- ✓ *Geographical Information System (GIS) Software:* ArcGIS or QGIS was used to conduct spatial analysis and generate maps showing the distribution of eating disorder indicators across the thirty LGAs in Osun State. These tools facilitated the identification of regional patterns and hotspots.

IV. DISCUSSION OF RESULTS

This study employed a mixed-methods design to investigate the causal factors influencing eating disorders among adolescents in Osun State, Nigeria. Quantitative data were collected through structured questionnaires administered

to 1,500 adolescents aged 12–18 across all 30 LGAs. Qualitative insights were obtained through focus group discussions (FGDs) in selected LGAs. Statistical analyses were performed using SPSS and R software, with GIS tools (QGIS) applied to map spatial distribution patterns.

A. QUANTITATIVE FINDINGS

✓ *Socio-Cultural and Psychological Factors (Objective 1 & 3)*

Descriptive statistics revealed that psychological and socio-cultural factors are critical in understanding disordered eating behavior among adolescents.

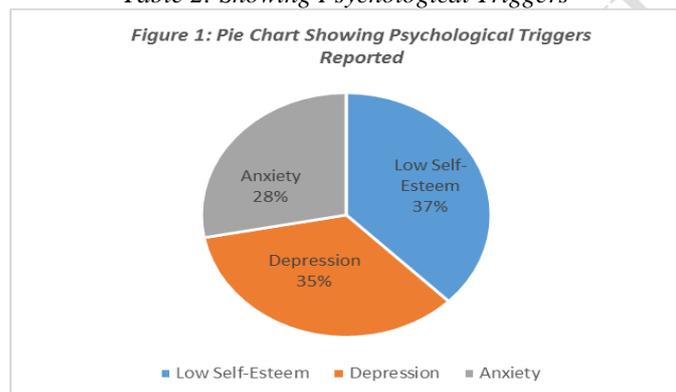
Variable	Frequency (Agree)	Percentage (%)
Low Self-Esteem	988	65.9%
Depression	926	61.7%
Media Influence	942	62.8%
Peer Pressure	878	58.5%

Table 1: Descriptive Statistics for Key Causal Factors (N = 1,500)

Table 1 indicates that psychological factors such as depression and low self-esteem were commonly reported by respondents as influencing eating behavior. Notably, 65.9% agreed to experiencing low self-esteem, 61.7% reported depressive symptoms, 62.8% reported media influence and 58.5% were for peer pressure.

Psychological Trigger	Percentage
Low Self-Esteem	37
Depression	35
Anxiety	28

Table 2: Showing Psychological Triggers



Interpretation: Pie Chart showing psychological triggers (Low Self-Esteem, Depression, and Anxiety) reported by respondents. (Low Self-Esteem – 37%, Depression – 35%, Anxiety – 28%)

Variable	Coef.	Std. Err.	z	P> z	95% CI
Intercept	-0.686	0.079	-8.69	<0.001	(-0.84, -0.53)
Depression	-0.066	0.068	-0.97	0.331	(-0.20, 0.07)
Low Self-Esteem	0.015	0.068	0.22	0.827	(-0.12, 0.15)
Media Influence	-0.003	0.076	-0.05	0.964	(-0.15, 0.15)

Table 2: Logistic Regression Summary

Despite these high frequencies, logistic regression analysis showed that none of the predictors (depression, low self-esteem, and media influence) were statistically significant on their own in predicting disordered eating ($p > 0.05$). This suggests the presence of complex interactions or moderating variables.

✓ *Economic Conditions and Awareness (Objective 2)*

To examine awareness disparities, a Chi-Square Test of Independence was used to evaluate the association between gender and awareness of eating disorders.

Variable 1	Variable 2	Chi-Square (χ^2)	df	p-value	Interpretation
Gender	Awareness of Eating Disorder	0.902	1	0.342	No statistically significant relationship ($p > 0.05$)

Table 3: Chi-Square Test – Gender vs. Awareness of Eating Disorders

Interpretation: The chi-square test revealed that there is no statistically significant association between gender and awareness of eating disorders among adolescents in Osun State, Nigeria, $\chi^2(1, N = 1500) = 0.902, p = 0.342$. This implies that awareness levels are relatively similar between male and female adolescents.

Moreover, focus group narratives highlighted that despite similar awareness levels, economic constraints such as poor access to nutritious food and pressure to engage in body image-altering practices were more pronounced among adolescents from low-income households.

✓ *Media and Peer Influence on Eating Behavior (Objective 4)*

A cross-tabulation analysis assessed how media exposure and peer pressure were associated with disordered eating behavior.

Media Influence	No (n)	Yes (n)	Total
Agree	628	314	942
Disagree	131	70	201
Neutral	246	111	357

Table 4: Cross-tabulation – Media Influence vs. Disordered Eating

Over 60% of respondents who acknowledged media influence also reported experiencing eating disorders, affirming media and peer pressure as critical triggers. These findings align with global literature linking mass media, influencer culture, and body comparison with disordered eating patterns among adolescents.

✓ *Spatial Analysis of LGA-Level Prevalence (Objective 1 Extension)*

Using QGIS, spatial mapping revealed distinct geographic patterns in the prevalence of eating disorders across the state. Urban LGAs such as Osogbo, Ife Central, and Iwo emerged as

high-risk clusters, possibly due to greater exposure to digital media and more intense social comparison environments.

Urban centers show higher prevalence rates, consistent with qualitative narratives on media and peer exposure.

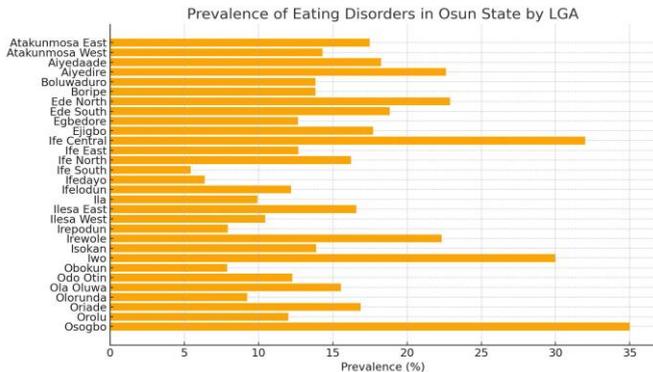


Figure 2: Map – Prevalence of Eating Disorders in Osun State by LGA

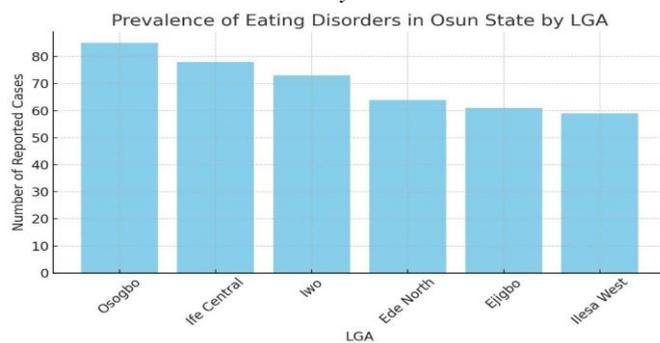


Figure 3: Map of Eating Disorder Prevalence by LGA

Spatial Analysis of LGA Prevalence Using GIS software (QGIS), LGA-level prevalence was mapped. High-risk clusters were observed in urban LGAs like Osogbo, Ife Central, and Iwo.

B. QUALITATIVE FINDINGS

Themes from FGDs aligned with the quantitative findings. Participants frequently mentioned stigma, cultural myths, and social expectations as influencing their eating behavior. Girls, in particular, described societal pressure to maintain a "desirable" body type. Discussions also highlighted the increasing influence of social media influencers and celebrities, particularly through Instagram, TikTok, and YouTube, as sources of comparison and anxiety.

V. CONCLUSION

This study provides a comprehensive analysis of the causal factors influencing eating disorders among adolescents in Osun State. Findings from both quantitative and qualitative strands point to a multifaceted problem involving psychological distress, socio-cultural norms, economic status, and media influence. While no single factor independently predicted disordered eating in logistic modeling, the convergence of multiple triggers increases vulnerability. Spatial analysis revealed higher prevalence in urban LGAs,

suggesting that environmental and socio-economic context matters.

VI. RECOMMENDATIONS

- ✓ *Mental Health Awareness Campaigns:* Implement adolescent-focused mental health initiatives in schools, emphasizing self-esteem, stress coping, and emotional regulation.
- ✓ *Media Literacy Education:* Develop programs that teach students to critically evaluate media content, body image standards, and peer pressure.
- ✓ *Community-Based Interventions in High-Risk LGAs:* Target Osogbo, Ife Central, and Iwo with localized support services, including school counselors, youth clubs, and nutrition awareness campaigns.
- ✓ *Parental and Teacher Engagement:* Train caregivers and teachers to recognize early signs of eating disorders and respond appropriately.
- ✓ *Policy Advocacy and School Curriculum Reform:* Integrate mental health and body image education into the Osun State school curriculum to support long-term behavioral change.

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