

PREVALENCE AND DETERMINANTS OF GENDER BASED VIOLENCE AGAINST WOMEN IN KOGI STATE, NIGERIA

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Abstract

Gender based violence against women (GBVAW) remains a critical public health and human rights concern in Nigeria, with significant social and reproductive health implications. This study examined the prevalence and determinants of GBVAW among women aged 15 to 49 years in Kogi State, Nigeria, using secondary data from the 2018 Nigeria Demographic and Health Survey (NDHS). A cross sectional analytical design was employed, and a state specific sub sample was extracted for analysis. Descriptive statistics were used to estimate prevalence, while bivariate analysis assessed associations between GBVAW and selected socio demographic, socioeconomic, reproductive, and normative factors. Multivariable binary logistic regression was conducted to identify independent predictors of GBVAW. The weighted prevalence of GBVAW in Kogi State was 6.06%. Bivariate analysis indicated significant associations between GBVAW and age, education, parity, employment status, partner characteristics, decision making autonomy, and attitudes toward wife beating. However, in the adjusted model, only age, pregnancy status, and parity remained statistically significant predictors. Women aged 30 to 34 years had significantly lower odds of experiencing GBVAW compared with adolescents aged 15 to 19 years, while pregnant women had higher odds of reporting violence. Higher parity was also associated with increased likelihood of GBVAW, with women having no or fewer children demonstrating significantly reduced odds relative to those with six or more children. Socioeconomic factors and attitudinal variables did not retain independent significance after adjustment. The findings highlight the importance of life course and reproductive factors in understanding GBVAW within Kogi State. Targeted prevention and response strategies, particularly those integrated within maternal and reproductive health services, are warranted. This study contributes state level empirical evidence to inform gender responsive policy and intervention efforts in Nigeria.

Keywords: Gender based violence; Women; Kogi State; Nigeria; Logistic regression; Prevalence; Intimate partner violence; Demographic and Health Survey

1. Introduction

Gender based violence against women (GBVAW) remains a persistent global public health, human rights, and development challenge. The most authoritative global synthesis of population based data estimates that approximately one in three women worldwide have experienced physical and/or sexual violence in their lifetime, most commonly perpetrated by an intimate partner (WHO, 2021). The consequences of GBVAW are extensive and multidimensional, encompassing physical injury, adverse reproductive health outcomes, psychological trauma, diminished productivity, and intergenerational social and economic costs (WHO, 2021). Addressing GBVAW is consequently recognized as essential to achieving gender equality and sustainable development.

GBVAW encompasses a range of harmful behaviours directed at women because of their gender, including physical violence such as slapping and beating, sexual violence such as rape and coercion, psychological or emotional abuse through threats and humiliation, and economic violence involving deprivation of financial autonomy. These forms of violence often co occur and are embedded within structural inequalities that shape women's vulnerability and constrain their access to protection and justice. Contemporary research continues to demonstrate that experiences of violence are patterned by socio demographic and relational characteristics, including age, education, household structure, and economic position (Maduka *et al.*, 2025; Sulaiman, 2025). Such findings reinforce the need to conceptualize GBVAW as a phenomenon influenced by interacting individual, household, and societal determinants rather than isolated personal attributes.

In Nigeria, GBVAW remains widespread and is shaped by complex sociocultural, economic, and institutional dynamics. Nationally representative evidence from the 2018 Nigeria Demographic and Health Survey (NDHS) indicates that intimate partner violence constitutes a significant component of women's exposure to violence (NPC and ICF, 2019). Recent secondary analyses of NDHS data further reveal that intimate partner violence is associated with markers of social vulnerability, including lower educational attainment, economic disadvantage, and differential access to digital and social resources (Adeleke, 2024). Policy oriented reports similarly highlight the persistent burden of violence against women in Nigeria and emphasize the need for strengthened prevention frameworks and survivor centred services (UN Women Nigeria, 2022; UN Women, n.d.). Despite legislative efforts, including the Violence against Persons (Prohibition) Act, implementation gaps and social norms that tolerate violence continue to undermine progress.

National aggregates may obscure meaningful subnational variation. Differences in sociocultural norms, urban and rural composition, household arrangements, and institutional capacity may influence both the prevalence and determinants of GBVAW across states. Kogi State, located in North Central Nigeria, represents a heterogeneous setting characterized by diverse ethnic groups, mixed urban and rural settlements, and varied socioeconomic conditions. Emerging state level diagnostics indicate persistent challenges related to awareness of gender based violence legislation, service accessibility, and community engagement (Invictus Africa, 2023). Additionally, local baseline assessments of sexual and gender based violence among adolescents in Kogi State underscore vulnerabilities among younger populations and point to broader systemic gaps in prevention and response mechanisms (Protect the Child Foundation, 2025). These state specific insights highlight the importance of contextualized empirical analyses to inform policy and programming.

Against this backdrop, the present study aims to examine the prevalence and determinants of GBVAW among women in Kogi State using the 2018 NDHS dataset. The study applies binary logistic regression modelling to quantify the associations between women's experiences of violence and selected socio demographic and socioeconomic predictors. By identifying context specific risk factors, the study aims to generate evidence capable of informing targeted interventions and strengthening policy responses in Kogi State.

2. Materials and Methods

2.1 Study Area

This study was conducted in Kogi State, located in the North Central region of Nigeria (see Figure 1). Kogi State shares boundaries with several states, including Niger, Kwara, Benue, Enugu, Anambra, Edo, Ondo, Nasarawa, and the Federal Capital Territory. The state comprises a mixture of urban and rural communities and is characterized by diverse ethnic groups, including Igala, Ebira, and Okun (Yoruba speaking) populations. The economy is largely agrarian, with additional activities in trade and public service. Sociocultural norms in the state, as in many parts of Nigeria, reflect varying degrees of patriarchal influence, which may shape gender relations and women's exposure to gender based violence.

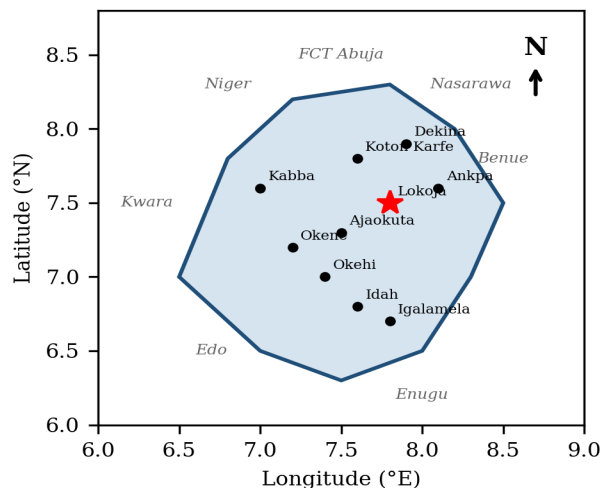


Figure 1: Schematic map of Kogi State, Nigeria, showing its geographical location within the country and key Local Government Areas.

2.2 Study Design and Data

This study employed a cross sectional analytical design using secondary data obtained from the 2018 Nigeria Demographic and Health Survey (NDHS) (NPC and ICF, 2019), implemented by the National Population Commission (NPC) in collaboration with ICF under the global DHS Program. The NDHS is a nationally representative household survey designed to collect data on population health, reproductive health, maternal and child health, family planning, and domestic violence indicators. The 2018 NDHS employed a stratified two stage cluster sampling design (NPC and ICF, 2019). In the first stage, enumeration areas (EAs) were selected using probability proportional to size from the national sampling frame based on the 2006 Population Census. In the second stage, households were systematically selected within each EA. The domestic violence module, administered to a randomly selected eligible woman per household, collected detailed information on women's experiences of physical, sexual, and emotional violence (NPC and ICF, 2019). The Kogi State sub sample was extracted, and sampling weights were applied to account for the complex survey design.

2.3 Variables

The primary outcome variable was experience of gender based violence (GBV), operationalized as a binary variable indicating whether a woman reported having experienced any form of violence (physical, sexual, or emotional) within the specified survey reference period. Women who reported at least one qualifying experience were coded as 1, while those who did not report any form of violence were coded as 0. Explanatory variables were selected based on theoretical relevance and prior empirical literature and were grouped into socio demographic

factors (age, place of residence, educational attainment, religion, ethnic group), socioeconomic factors (wealth index, employment status, partner's education and occupation), reproductive characteristics (parity, current pregnancy status), and normative and decision making variables (attitudes toward wife beating, household decision making autonomy) (Levin, 2006; Rutstein and Johnson, 2004).

2.4 Statistical Analysis

All analyses were conducted using R (R Core Team, 2022). Sampling weights provided in the NDHS dataset were applied to account for the stratified two stage cluster sampling design and to ensure that estimates were representative of women in Kogi State. Descriptive statistics were computed to summarize the characteristics of the study population. Bivariate associations between GBV and explanatory variables were assessed using the Pearson chi square test for categorical variables. A binary logistic regression model (Hosmer *et al.*, 2013) was fitted to identify determinants of gender based violence, with the logistic model defined as:

$$\log[\pi_i / (1 - \pi_i)] = \beta_0 + \beta_1 X_{i1} + \dots + \beta_k X_{ik}$$

where π_i denotes the probability that woman i experienced GBV given a vector of explanatory variables X_i , and β_j (for $j = 1, \dots, k$) are regression coefficients. The exponential of the regression coefficient, $\exp(\beta_j)$, represents the odds ratio (OR), interpreted as the multiplicative change in the odds of experiencing GBV associated with a one unit increase in the predictor, holding other variables constant. Maximum likelihood estimates were obtained using Iteratively Reweighted Least Squares (IRLS), as implemented by the *glm* function in R. Model assessment was carried out using residual deviance, the Akaike Information Criterion (AIC), and Wald statistics for individual coefficients (Hosmer *et al.*, 2013; Agresti, 2018). Adjusted odds ratios (AORs) were reported to quantify the strength and direction of associations.

3. Results

3.1 Sample Characteristics and Overall Prevalence

A total of 907 women aged 15 to 49 years from Kogi State were included in the analysis after applying eligibility criteria and survey weights. The mean age of respondents was 29.7 years (SD = 10.5). Most respondents resided in rural areas (69.7%), while 30.3% lived in urban areas. In terms of educational attainment, 13.5% had no formal education, 27.1% had primary education, 49.9% had secondary education, and 9.5% had higher education. The weighted prevalence of GBVAW in Kogi State was 6.06%, meaning that 55 of the 907 sampled women reported experiencing at least one form of gender based violence (Figure

2).

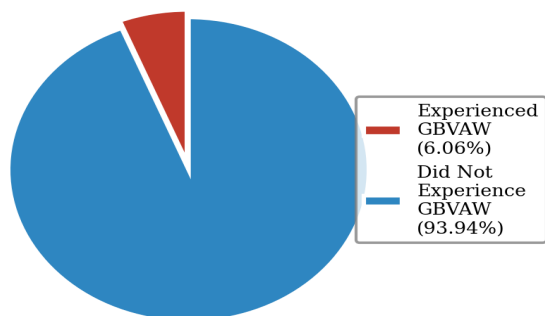


Figure 2: Overall weighted prevalence of gender based violence against women (GBVAW) among women aged 15 to 49 years in Kogi State, Nigeria.

3.2 Bivariate Analysis

Table 1 presents the distribution of respondents by socio demographic, socioeconomic, reproductive, and normative characteristics, the prevalence of GBV across these categories, and the corresponding bivariate test statistics. The age distribution of the respondents showed significant variation in the prevalence of GBVAW across different age groups ($\chi^2 = 19.1, p = 0.004$). Women aged 25 to 29 and 40 to 44 years experienced the highest prevalence rates at 10.9% and 10.1%, respectively (Figure 3). This pattern suggests that GBVAW is particularly prevalent among women in their late twenties and early forties, possibly due to factors such as family dynamics, economic pressures, or increased vulnerability within these age ranges.

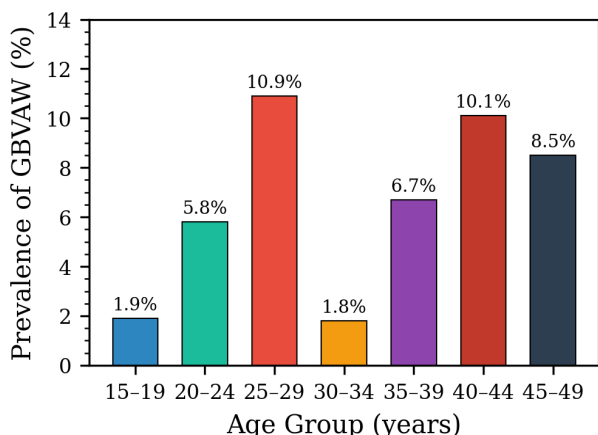


Figure 3: Prevalence of gender based violence against women by age group in Kogi State, Nigeria.

The type of area of residence (rural versus urban) did not show a statistically significant association with the experience of GBVAW ($\chi^2 = 1.01, p = 0.314$). Education level was found to

be significantly associated with the experience of violence ($\chi^2 = 87.09, p < 0.01$), with women having no formal education reporting the highest prevalence at 11.5%, while those with higher education reported the lowest at 3.5% (Figure 4). This trend highlights the protective role of education against GBVAW, possibly by empowering women with knowledge, economic independence, and social support networks (Maduka *et al.*, 2025; Benebo *et al.*, 2018).

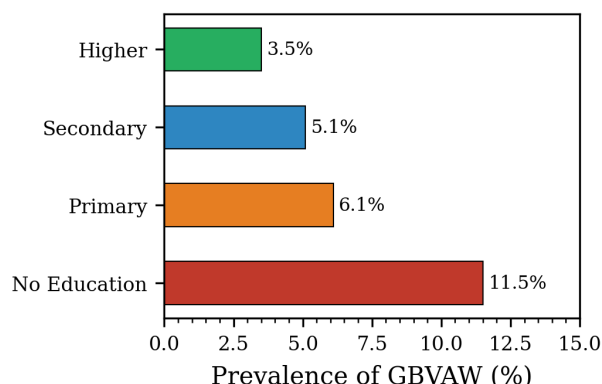


Figure 4: Prevalence of gender based violence against women by educational attainment in Kogi State, Nigeria.

Wealth class did not show a significant association with GBVAW ($\chi^2 = 2.17, p = 0.704$), nor did religious affiliation ($\chi^2 = 0.81, p = 0.668$). The number of children ever born was strongly associated with GBV prevalence ($\chi^2 = 26.70, p < 0.001$). Women with six or more children had the highest prevalence at 10.6%, compared with 0.4% among those with no children (Figure 5). Employment status was another significant factor ($\chi^2 = 4.11, p = 0.042$), with employed women reporting higher rates of violence (6.9%) compared to those not employed (2.8%). Husband/partner’s education level was also significantly related to the prevalence of violence ($\chi^2 = 17.96, p = 0.003$), as was the partner’s occupation ($\chi^2 = 22.50, p = 0.032$).

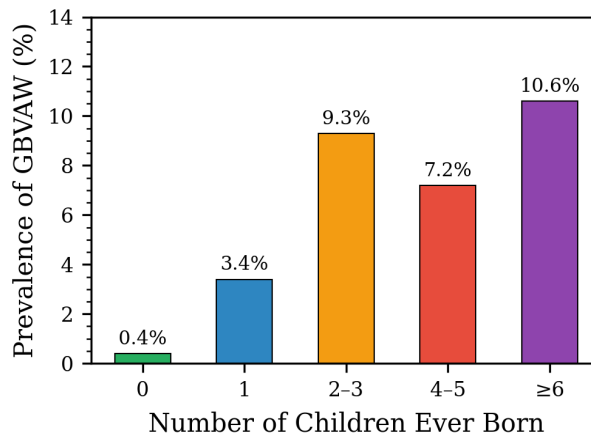


Figure 5: Prevalence of gender based violence against women by parity (number of children ever born) in Kogi State.

Attitudes toward gender norms, particularly those justifying hitting or beating in specific scenarios, were significantly related to the prevalence of violence. Women who believed that hitting was justified if the wife neglected children ($\chi^2 = 19.67, p < 0.0001$) or argued with her husband ($\chi^2 = 15.33, p = 0.0004$) reported higher prevalence rates of GBVAW (Figure 6). These findings highlight the critical role of societal attitudes and norms in perpetuating violence against women (Benebo *et al.*, 2018; Heise, 1998).

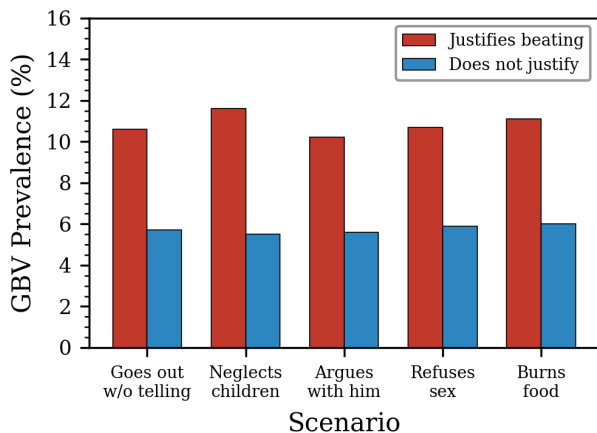


Figure 6: Prevalence of GBVAW by attitudes toward wife beating across five justification scenarios in Kogi State.

3.3 Binary Logistic Regression Results

Table 2 presents the results of the binary logistic regression model. The analysis of age as a predictor of GBVAW reveals that women aged 30 to 34 years had significantly lower odds of experiencing violence compared to adolescents aged 15 to 19 years (OR = 0.079, $p = 0.011$). The coefficients for other age groups were not statistically significant, although there is a general trend of decreasing odds with increasing age. Wealth index, educational attainment, residential area, religious affiliation, and employment status were not found to be statistically significant predictors of GBVAW in the adjusted model.

Pregnancy status emerged as a highly significant predictor, with pregnant women having substantially higher odds of reporting GBVAW compared to those who were not pregnant (OR = 1.562, $p < 0.001$). Parity showed a strong gradient, with women who had no children (OR = 0.01, $p < 0.001$) and those with one child (OR = 0.134, $p = 0.013$) having markedly lower odds of experiencing violence compared to women with six or more children. The model examined attitudes towards justifications for violence with mixed results; none of the attitudinal variables reached statistical significance in the adjusted model. The model's overall fit was assessed using the

residual deviance (338.02 on 869 degrees of freedom) and the AIC (392.02), suggesting a reasonable explanation of the data. Figure 7 presents a forest plot of the key adjusted odds ratios for the statistically important predictors.

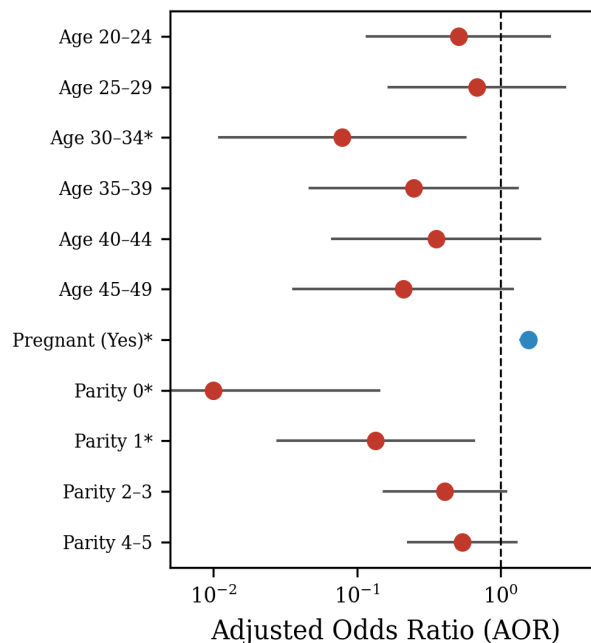


Figure 7: Forest plot of adjusted odds ratios (AORs) and 95% confidence intervals for significant predictors of GBVAW. Asterisks (*) denote statistical significance at $p < 0.05$.

4. Discussion

This study examined the prevalence and determinants of gender based violence against women (GBVAW) among women aged 15 to 49 years in Kogi State using the 2018 NDHS domestic violence module. The overall prevalence of GBV observed in this analysis (6.06%) is substantially lower than estimates commonly reported for Nigeria when broader definitions, longer recall periods, or composite intimate partner violence (IPV) constructs are applied. For instance, secondary analyses using the 2018 NDHS have reported markedly higher levels of recent IPV at the national level, often approximating one in three women depending on the analytic sample and definitions applied (Olubodun *et al.*, 2023). Regional and facility based estimates across Nigeria frequently exceed this level, especially among pregnant women or women experiencing infertility, where prevalence estimates are typically much higher than in general population surveys (Maduka *et al.*, 2025; Ayeni and Tekba, 2022).

Several factors may account for this disparity. First, prevalence estimates are highly sensitive to how GBV is operationalized, whether the measure reflects any lifetime experience of violence, recent experience within the past 12

months, a composite IPV measure, or a narrower indicator restricted to physical violence only. Studies that employ DHS style IPV composites or include controlling behaviours often yield higher prevalence than those restricted to a limited set of experiences or narrower reference periods (Olubodun *et al.*, 2023; Armah Ansah *et al.*, 2025). Second, underreporting remains a major concern in violence research, particularly in patriarchal contexts where disclosure may be constrained by stigma, fear of reprisal, or perceived normalization of partner control and abuse. The DHS approach of interviewing only one eligible woman per household for the domestic violence module and prioritizing privacy improves safety and ethical compliance but does not fully eliminate disclosure barriers (Tefaw *et al.*, 2022; UN Women, 2021). Third, the present analysis was restricted to a single state (Kogi) and therefore reflects a distinct sociocultural context. Subnational variation is well documented in Nigeria, with differences across states and regions shaped by norms, economic conditions, and institutional capacity for prevention and response (Benebo *et al.*, 2018; Adeleke, 2024).

In the multivariable model, women aged 30 to 34 years had significantly lower odds of reporting GBV compared with adolescents aged 15 to 19 years. This pattern is consistent with a life course interpretation in which adolescents and very young women may face heightened vulnerability due to reduced bargaining power, limited access to resources, and constrained autonomy within relationships. These factors are emphasized within ecological frameworks of violence (Heise, 1998). Empirical evidence in Nigeria has similarly suggested that younger age groups can experience elevated risks for certain forms of IPV, including sexual violence, particularly in early unions or contexts where women have limited negotiating capacity (UAPS, 2024). However, the age and violence association is not uniform across studies; some analyses indicate that cumulative exposure can increase with age, especially for lifetime measures, whereas others find concentrated risk in early reproductive ages depending on the outcome definition and sample composition (Benebo *et al.*, 2018; UAPS, 2024). The present findings therefore reinforce the importance of aligning interpretation with the outcome's reference period and the population subgroup under analysis.

A central finding of this study is the significantly higher likelihood of GBV among pregnant women compared with those not pregnant. This aligns with a growing body of evidence indicating that pregnancy can be a period of increased vulnerability to partner violence and coercive control, with harmful consequences for maternal mental health, antenatal care engagement, obstetric outcomes, and infant wellbeing (Ayeni and Tekba, 2022; Simon *et al.*, 2025). In Nigeria, studies focusing on IPV during pregnancy have reported that violence

may persist or escalate during pregnancy, often linked to relationship conflict, financial strain, jealousy, and patriarchal expectations surrounding sexual access and reproductive decision making (Ayeni and Tekba, 2022). Beyond Nigeria, multi country evidence from low and middle income countries (LMICs) similarly underscores pregnancy associated disparities in IPV, suggesting that pregnancy may not uniformly protect women and can, in some contexts, intensify violence dynamics (Simon *et al.*, 2025). From a public health and programmatic standpoint, this finding supports the integration of routine GBV enquiry and referral within antenatal care (ANC), accompanied by confidential, survivor centred pathways to services. It also underscores the importance of linking GBV prevention to reproductive and maternal health programming, particularly in settings where women may have their most consistent contact with health systems during pregnancy.

Parity demonstrated a strong pattern in the adjusted model, with women with no children or one child showing markedly lower odds of GBV compared with women with six or more children. This association is consistent with literature suggesting that higher parity may increase relational strain through economic pressures, childcare demands, and intensified dependence, which are conditions that can elevate conflict and reduce women's exit options (Benebo *et al.*, 2018; UAPS, 2024). While parity may function partly as a proxy for union duration and thus cumulative exposure, it can also reflect the compounding effects of resource constraints, especially in households where gender norms assign domestic labour and childcare responsibilities primarily to women. Evidence from Nigeria and other sub Saharan African contexts similarly reports associations between higher numbers of living children and IPV risk, although the magnitude and direction can vary with confounding factors such as education, wealth, partner alcohol use, and community norms (Benebo *et al.*, 2018; UAPS, 2024).

In bivariate analyses, education, employment status, partner characteristics, and acceptance of wife beating were associated with GBV; however, these factors largely lost statistical significance in the adjusted model. This attenuation is not unusual in GBV research because many socioeconomic and normative variables are correlated with each other and may operate through shared pathways. For example, women's education can reduce risk by strengthening economic opportunities and decision making autonomy, but it can also interact with male partner characteristics and community gender norms, producing heterogeneous effects across settings (Benebo *et al.*, 2018). Similarly, acceptance of wife beating is widely recognized as a marker of gender inequitable norms and is often associated with increased IPV risk and reduced help seeking; however, in multivariable models it may be mediated by other

structural variables such as rurality, poverty, partner behaviour, and community level normative climates (Benebo *et al.*, 2018; Heise, 1998). It is also plausible that the observed non significant associations reflect limitations in statistical power, given the relatively low prevalence observed in this state sub sample, as well as measurement constraints inherent in single module survey exposure data (UN Women, 2021; Adeleke, 2024).

4.1 Implications for Policy and Practice

The findings carry several implications for policy and programming. The pregnancy association suggests that maternal health services in Kogi State are a strategic entry point for identifying and supporting women at risk, consistent with evidence linking IPV to maternal and child health harms and service barriers (Simon *et al.*, 2025; Sunmola *et al.*, 2026). The parity gradient suggests that prevention and support programs should consider family size related stressors and economic vulnerability, including social protection linkages, psychosocial support, and household level interventions that address conflict resolution and gender norms. The gap between the observed prevalence in this analysis and higher national or multi study estimates highlights the need for improved disclosure environments and strengthened referral networks, including community level awareness and confidential access to survivor centred care.

4.2 Limitations

This study's cross sectional design precludes causal inference, and associations should be interpreted as correlational. The analysis relies on self reported survey data, which are vulnerable to recall bias and, more importantly, social desirability bias and underreporting due to stigma and safety concerns. In addition, the domestic violence module is administered to a subset of eligible women (one per household), which can reduce precision for state level estimates. Residual confounding is possible due to unmeasured variables such as partner alcohol use, controlling behaviours, conflict history, and community level normative climate, which are frequently implicated in IPV risk pathways (Benebo *et al.*, 2018; Heise, 1998).

5. Conclusion

This study examined the prevalence and determinants of gender based violence against women in Kogi State using state level data from the 2018 Nigeria Demographic and Health Survey. The findings indicate that although the overall reported prevalence of GBV in Kogi State was relatively low compared with national estimates, significant variation exists across demographic and reproductive characteristics. In particular, age, pregnancy status, and parity emerged as independent predictors

of GBV after adjustment for socioeconomic and normative factors. Women in early mid adulthood had reduced odds of violence compared with adolescents, while pregnant women and those with higher parity faced significantly greater vulnerability. Socioeconomic indicators and attitudinal norms, although important at the bivariate level, did not retain independent effects in the fully adjusted model.

The study contributes state specific empirical evidence to a literature that is often dominated by national aggregates, thereby highlighting the importance of localized analysis in informing policy and intervention strategies. The results underscore the need for targeted prevention and support efforts, particularly within maternal health services and among women with larger family sizes. This work strengthens the evidence base for gender responsive public health planning in Kogi State and similar settings across Nigeria.

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