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Research Article

Prevalence and Risk Factors of Intimate Partner Violence among Women Who Use Alcohol During Pregnancy in Plateau State, Nigeria: A Cross-Sectional Study

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About Article

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ABSTRACT

Partner violence and alcohol use disorder among pregnant women are recognised as major public health problems worldwide, particularly in Africa. Their significance lies in their ability to impact both the mother and the unborn child. This hospital-based prevalence study investigates the prevalence, pattern and risk factors for partner violence among pregnant women who consume alcohol in Plateau State, Nigeria. A multistage sampling technique was used to select 264 participants from the antenatal attendees in Vom Christian Hospital and General Hospital, Barkin-Ladi. Structured questionnaires were administered to collate data on socio-demographic variables, abuse type and prevalence, and alcohol use patterns. Of the women screened, 22.8% suffered from any of verbal, physical, and sexual abuse, and some suffered from multiple types of abuse, with non- alcohol using women contributing 3.8% compared to 18.2 % of alcohol using women. Women who used alcohol were 6.7 times more likely to report abuse than those who did not, and alcohol use was predictive of abuse (p 0.00001). Among all the groups, verbal abuse was the most prevalent (65.9%), followed by physical and sexual abuse, respectively. Some risk factors associated with abuse included younger age (p=0.018; 0.012), no or lower educational status (p=0.01; 0.05), and farming (p=0.001). Older age, a secondary level of education or higher, and formal employment were all protective factors. Religion and marital status were not significantly related to abuse. According to this research, there is an urgent need for structured interventions addressing both substance use and interpersonal violence within antenatal care programs.

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1. INTRODUCTION

A World Health Organisation (WHO) multi-country study among women of reproductive age revealed that the overall prevalence of IPV ranged between 15% in urban areas (such as Japan) to 71% in provincial areas such as Ethiopia (Garcia-Moreno *et al*., 2006). Evidence reveals that the problem is mostly prominent in developing countries where socioeconomic status is low and education is limited, especially in sub-Saharan Africa (SSA) countries (Abrahams *et al*., 2006). Pregnancy is a period marked by increased vulnerability to psycho-social stressors, including intimate partner violence (IPV) and substance use. Gender-based violence (GBV), a globally prevalent health, human rights, development, and humanitarian challenge, is defined as violence perpetrated against a particular gender based on ascribed differences.Click or tap here to enter text. (Garcia-Moreno *et al*., 2006) GBV is an all-embracing term that includes physical, sexual, and psychological violence that occurs between couples in a relationship or that the state condones (IASC, 2005). Intimate Partner Violence (IPV) is a subcategory of GBV that includes abuses of a former, current, or prospective intimate partner (Raes *et al*., 2025). Intimate partner violence (IPV) refers to conduct within an intimate relationship that causes physical, sexual, or psychological harm. It involves acts of physical, sexual, psychological abuse, and manipulations, and controlling behaviours. This definition refers to violence by both current and former spouses and partners (Oram *et al*., 2022).

2. LITERATURE REVIEW

Alcohol use during pregnancy is linked to adverse maternal and fetal outcomes and may co-occur with experiences of abuse (Corrales-Gutiérrez *et al*., 2020; Jarlenski *et al*., 2020; Adebowale & James, 2020; Paul *et al*., 2025). Despite that, as many as 10% of pregnant women still consume alcohol worldwide, such that it is recognised as a public health issue (Godfrey *et al*., 2025). Several studies demonstrate the high level of prenatal alcohol use in Nigeria (Paul *et al*., 2025; Agiresaasi *et al*., 2022). Caetano *et al.* (2017) and Messings *et al.* (2016) found that alcohol use was significantly associated with IPV.

The United Nations, in its first article on the Declaration on the Elimination of Violence Against Women, defines violence against women as 'any act of gender-based violence that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women, including threats of such acts, force or random deprivation of liberty, whether occurring in public or private life (Melander & Alfredsson, 1997).

The latest inclusive review published by the World Health Organisation in 2018 reported that 'the global prevalence of physical and/or sexual intimate partner violence among all women who were ever in a relationship was 27% (Sardinha *et al*., 2022). Global prevalence of physical, psychological, and sexual IPV in pregnancy as reported by Sardinha et.al was 9.2%, 18.7%, and 5.5%, respectively (Sardinha *et al*., 2022).

IPV rates varied within and between continents, with Africa reporting the highest prevalence and Europe reporting the lowest (Romam-Galvez *et al*., 2021). In Kenya, Morris *et al.*(2022) found a lifetime prevalence of IPV in the study area of 60.3%, while in Ethiopia, Berhanie *et al.* (2019) found 40.8% and 68.6% prevalence rates for index and lifetime pregnancies, respectively, in their cohort. A South African study found that more than 20 % of all women experienced at least one act of physical, psychological, or sexual IPV during pregnancy, and nearly 25% of all women experienced at least one act of physical, psychological, or sexual IPV during the first 9 months postpartum (Groves *et al*., 2015). In Nigeria, the studies found prevalence between 15.4% and 37.2% (Ezeudu *et al*., 2019; Ubom *et al*., 2025; Okonkwo *et al*., 2024; Okunola *et al*., 2021; Ashimi & Amole, 2015).

In this study, several risk factors were identified, including lower levels of education, marriage at a young age, poor wealth indices, rural residential areas, and acceptance of gender norms that contribute to the prevalence of IPV in LMICs (Gunarathne *et al*., 2023). However, Gomez *et al.* (2019) contended that the relationship between spousal alcohol use and IPV was modified by other factors such as educational level, earning power and whether the individual lived with family or not.

Some factors are associated with IPV, including polygamous marriage, low level of education, IPV exposure in girlhood, maternal unemployment, low monthly income, unemployment and substance abuse in partner, increased maternal age, having family members choose their partner, and marital disharmony (Morris *et al*., 2022; Okonkwo *et al*., 2024). Others include nationality and the type of marriage (Ashimi & Amole, 2015), alcohol abuse, young age, attitudes supportive of wife beating, multiple sexual partners, a history of childhood abuse, a history of childhood domestic violence, and experiencing or perpetrating other forms of violence in adulthood, all of which increase the risk of IPV (Abramsky *et al*., 2011).

In Nigeria, as in other climes, certain ethnic and cultural norms surrounding alcohol use contribute to the persistence of drinking behaviours even during pregnancy (Ssebunnya *et al*., 2020; Popova *et al*., 2022; Watt *et al*., 2014). Understanding the types of abuse and associated risk factors that are associated with alcohol use among women who use alcohol is essential so that strategies can be developed to address these concerns.

This study examines the prevalence and pattern of abuse and the relationship between some factors and experiences of abuse among pregnant women who consume alcohol, using a representative sample from Plateau State (PLSG, 2025).

3. METHODOLOGY

3.1. Study setting

Plateau State is one of 6 states comprising the north-central region of Nigeria, made up of 17 local government areas with a land area of 26,899 square kilometers (10,386 sq miles) and an estimated population of about three million people. It is located between latitude 8°24' N and 10°30' N and longitude 8°32' E and 10°38' E (PLSG, 2025). The state has 18 General Hospitals, a Federal Teaching hospital, a Federal Orthopaedic hospital, a state specialist hospital, and several missionary hospitals spread across the local government areas. This hospital-based study was conducted at the antenatal clinics of the Vom Christian Hospital (VCH) and Barkin-Ladi General Hospital in Jos South and Barkin-Ladi Local Government Areas (LGAs), respectively, of Plateau State. The indigenes of these LGAs are mainly farmers and are populated by the Berom ethnic group. VCH, one of several faith-based hospitals, is a 300-bed secondary

health facility that has a memorandum of understanding with Jos University Teaching Hospital for the training of resident doctors in various specialities. The Psychiatry Department of Jos University Teaching Hospital collaborates with the hospital to run a Centre for Addiction Treatment and Research (CATR) in this facility. The General Hospital, Barkin-Ladi, one of several General Hospitals, is an 88-bed secondary health facility under the management of the Plateau State Hospital Management Board, and is the only health facility in the area that provides secondary-level health care.

3.2. Sample size determination

To determine the minimum sample size, the Cochran formula for cross-sectional studies was used (Howitz, 2004).

$$n = \frac{z^2 \times p\,(1-p)}{d^2}$$

Where,

- n = required sample size
- Z = Z-score (1.96 for a 95% confidence level)
- p = (prevalence of IPV in another study of 21.8% (Okonkwo *et al.*, 2024).
- d = margin of error (5% or 0.05)

$$n = \frac{1.96^2 \times 0.21(1-0.20)}{0.05^2}$$

$$n = \frac{0.637344}{0.025}$$

$$= 254.92 = 255$$

10% non-response = 25+ 255 = 280

3.3. Study design

This was a cross-sectional, descriptive study (Horwitz, 2004).

3.4. Study population

Pregnant women who were attending the antenatal clinics at VCH and General Hospital, Barkin-Ladi, at the time of the study (January to April 2018).

3.5. Sampling technique

A multi-stage sampling technique was used (Weiss *et al.*, 2012).

3.5.1. Stage 1: Selection of study areas

The purposive sampling technique was utilised to select the two LGAs, Jos South and Barkin-Ladi, because of their reputation for widespread consumption of alcoholic beverages, especially local alcoholic brews.

3.5.2. Stage 2: Selection of health facilities

Purposive sampling was also utilised in the selection of the two health facilities, Vom Christian Hospital and General Hospital, Barkin-Ladi. This was because they both offer comprehensive secondary health services, including antenatal services.

3.5.3. Stage 3: Selection of subject

A systematic random sampling technique was used at the facility level to select the respondents. The line list of all pregnant women attending the ANC clinic at each facility was used as the sampling frame. The sampling interval (k) was obtained by dividing the number of pregnant women attending the ANC clinic by the calculated sample size for both facilities. The first pre-coded folder in all cases was randomly selected by balloting from the line list. Thereafter, every kth folder based on the sampling interval was selected. In situations where the owner of a selected folder was unavoidably absent or did not consent to the study, the following consecutive folder in the list was selected.

Participants and sampling A total of 280 pregnant women aged 15 to 49 years were recruited using a systematic sampling technique. Inclusion criteria were pregnancy status, attendance at ANC, and informed consent. Women using other psychoactive substances were excluded.

3.6. Data collection instruments

- **Socio-demographic questionnaire:** This structured questionnaire collected data on age, religion, denomination, educational status, occupation, marital status, and partner alcohol use.
- **Abuse screening questionnaire:** This structured, non-validated questionnaire was used to detail information on verbal, physical, and sexual abuse.
- **Audit:** This tool was developed by the WHO to assess and categorise levels of alcohol consumption. This is a 10-item questionnaire used to screen for binge, hazardous, harmful drinking, and dependence (Williams, 2014; Gache *et al.*, 2005). It can categorise individuals who drink alcohol into lower risk, increasing risk, higher risk, and possible dependence (Nadkarni *et al.*, 2019). It has been validated in pregnancy and demonstrates high sensitivity and specificity. The internal consistency of the AUDIT is not affected by translation, wording changes, or the order of questions. The questionnaire was translated into the Hausa language and back-translated by a lecturer in the Hausa department at the University of Jos.

Scoring and grading of the AUDIT questionnaire utilised the standard scoring criteria

- 0 to 7 indicates low risk
- 8 to 15 indicates increasing risk
- 16 to 19 indicates higher risk,
- 20 or more indicates possible dependence

Scores greater than or equal to 8 are considered an indicator of problematic alcohol (Nadkarni *et al.*, 2019).

3.7. Data analysis

Data was analysed using SPSS version 23 (Morgan *et al.*, 2019). Results were presented as tables with frequencies and percentages. The Chi-square tests evaluated associations between socio-demographic variables and abuse. Odds ratio was calculated to establish the odds of abuse occurring, while the Relative Risk demonstrated the risk of abuse in the alcohol using sample compared to the non-alcohol-using sample. A p-value less than 0.05 was considered statistically significant.

3.8. Ethical consideration

The ethical approvals were obtained from the ethical committees of VCH and the Plateau State Hospital Management Boards,

respectively. Written informed consent was secured, and participants were assured of the study's confidentiality. The ethical principles of beneficence and non-maleficence were strictly adhered to.

4. RESULTS AND DISCUSSION

Although 280 persons were assessed, only 263 completed questionnaires were returned, ensuring a response rate of 93.9%.

Table 1. Socio-demographic characteristics of the study population

Variable	Frequency n=263	Percentage (%)
Age group		
15-20	47	17.9
21-25	72	27.4
26-30	80	30.4
31-35	42	16.0
36-40	18	6.8
41-45	4	1.5
Religion		
Christianity	204	77.6
Islam	59	22.4
Denomination		
Catholic	23	11.3
Pentecostal	31	15.2
Others	149	73.0
Educational level		
None	33	12.5
Primary	45	17.1
Secondary	129	49.0
Tertiary	56	21.3
Occupation		
Civil servant	29	11.0
Housewife	25	9.6
Trader	53	20.2
Farmer	67	25.5
Others	89	33.8
Marital status		
Married	259	98.5
Single	4	1.5

Participant Characteristics:

• **Age distribution:** the age range 26-30 was the most (30.4%), while 41-45 was the least at 1.5%.

• **Religion:** Christians were at 77.6% while 22.4% were Muslims.

• **Education:** most had up to secondary level of education at 49.1% while 12.5% had no formal education.

• **Occupation:** Many of the women were involved in multiple small-scale business ventures at 33.8% while 25.5% identified as farmers.

• **Marital status:** 98.5% were married.

Table 2. Socio-demographic characteristics of the study population vs Abuse Prevalence

Variable	Frequency n=263	Abuse Prevalence
Age group		
15-20	47	17
21-25	72	24
26-30	80	11
31-35	42	4
36-40	18	2
41-45	4	0
Religion		
Christianity	204	45
Islam	59	13
Denomination		
Catholic	23	5
Pentecostal	31	7
Others	149	46
Educational level		
None	33	20
Primary	45	20
Secondary	129	13
Tertiary	56	5
Occupation		
Civil servant	29	5
Housewife	25	5
Trader	53	9
Farmer	67	24
Others	89	15
Marital status		
Married	259	58
Single	4	0

Table 2 shows the prevalence of abuse across the demographic strata of the individuals recruited in this study.

Table 3. Association between socio-demographic factors and abuse

Category	Abuse	No Abuse	Chi-Square	p-value	Odds ratio	Relative Risk
Age						
15_20	17	30	5.672	.0184	2.419	1.906
21_25	24	48	6.463	0.0117	2.309	1.873
26_30	11	69	3.943	0.0357	0.461	0.535
31_35	4	38	-	0.0408	0.326	0.39
36_40	2	16	-	0.3781	0.422	0.486
41_45	0	4	-	0.5788	0.0	0.0
Religion						
Christianity	45	159	0.0	1.0	1.001	1.001
Islam	13	46	0.0	1.0	0.999	0.999
Denomination						
Catholic	5	18	0.0	1.0	0.98	0.984
Pentecostal	7	24	0.0	1.0	1.035	1.027
Other	46	103	14.392	0.0001	3.796	2.933
Educational level						
None	20	13	30.113	0.0	7.773	3.668
Primary	20	25	14.302	0.0002	3.789	2.55
Secondary	13	116	19.779	0.0	0.222	0.3
Tertiary	5	51	6.193	0.0063	0.285	0.349
Occupation						
Civil Servant	5	24	0.181	0.6381	0.711	0.761
Housewife	5	20	0.0	1.0	0.873	0.898
Trader	9	44	0.658	0.3596	0.672	0.728
Farmer	24	43	8.868	0.0033	2.659	2.065
Others	15	74	1.683	0.16	0.618	0.682
Marital status						
Married	58	201	-	0.5788	-	-
Single	0	4	-	0.5788	0.0	0.0

• **Interpretation:** Younger women (15–25) and (21-25) are at significantly higher risk of abuse, while women aged 26–35 and 31-35 are at reduced risk. It suggests that young age is a risk factor while older age is a protective factor.

4.1. Religion

• Christianity: OR = ~1.0, not significant.
• Islam: OR = ~1.0, not significant.

4.2. Denomination

• Catholic, Pentecostal, and Others demonstrated no significant associations ($p > 0.05$).
• Interpretation: Neither religion nor Christian denominations were significantly associated with abuse.

4.2.1. Educational level

• No education: OR > 2, RR > 2, $p < 0.01$ demonstrated strong risk factor.
• Primary education: OR ~2, RR ~2, $p < 0.05$ showed significant risk.
• Secondary education: OR < 1, protective.
• Tertiary education: OR << 1, strongly protective.
Interpretation: Low education (none/primary) increases the risk of abuse, while secondary/tertiary education protects.
Occupation
• Farmers: OR > 2, RR > 2, $p < 0.01$ ⟶ significantly higher risk.
• Civil servants, housewives, traders, others ⟶ no significant differences.

4.2.2. Interpretation

Being a farmer was strongly associated with higher abuse risk.

4.3. Marital status

- Married: OR ~1.0, not significant.
- Single: no cases of abuse, cannot compare statistically.

4.3.1. Interpretation

Marital status showed no significant association.

Table 4. Pattern of alcohol use

Pattern of alcohol use	Frequency	Percentage (%)
AUD	37	14.0
Non-AUD	42	16.0
Do not use alcohol	184	70.0
Total	263	100.0

Summary of Table 4.

- 184 (70%) did not consume alcohol
- 79 (30%) consumed alcohol during pregnancy.

Table 5. Relationship between abuse and pattern of alcohol use

Abuse	Non-Alcohol Use (184)	Alcohol Use (79)
Yes	10 (5.43%)	48 (60.76%)
No	174 (94.57%)	31 (39.24%)
Total	184	79

- 37 (14%) had AUD.
- 42 (16%) did not have AUD but used alcohol

Table 5 demonstrates the prevalence of abuse among the different categories of women, comprising non-alcohol-using women, alcohol using women, and women who have alcohol use disorder. It shows that overall, 58 (22%) of pregnant women in this study suffered from any abuse. Ten women representing 5.34% of the 184 women not using alcohol in pregnancy suffered any abuse. This is 3.8% of the overall sample size and 17.24% of the abuse population. Forty-eight of those abused, representing 60.76% of the 79 who used alcohol, suffered any abuse. This represents 18.25% of the total sample population and 82.76% of those who suffered any abuse. This clearly demonstrates that women who use alcohol contribute significantly to the burden of those who suffer abuse.

Table 6. Association between abuse and pattern of alcohol use

	Abuse	No Abuse	χ^2	P	OR	RR
Non-AU	10	174				
Alcohol Use	48	31	49.61	<.00001	0.10	6.74

- Pearson Chi-square (df = 1): $\chi^2 = 49.61$, $p \approx 1.9 \times 10^{-12}$
- Odds Ratio (Alcohol vs Non-AU): 0.10 (indicating the alcohol group is much more likely to report abuse)
- Relative Risk (RR): 6.74
- 95% CI for RR: 3.54 – 12.83

Pregnant women who use alcohol (use + abuse) have about 6.7 times higher risk of experiencing abuse compared to non-users. When the table is dichotomized into alcohol using and non-alcohol-using women, the odds ratio demonstrates that alcohol using women are more likely to report abuse than non- alcohol using women.

The most prevalent form of abuse suffered by women in this study was verbal abuse, which constituted a significant proportion of the total abuse cases. This finding underscores the need for interventions that address verbal abuse in pregnant women.

Table 7. Subtypes of abuse and frequency

Types of Abuse	Frequency
Any abuse	48
Verbal Abuse	41
Physical Abuse	23
Sexual Abuse	23

Table 8. Association between type of abuse and pattern of alcohol use

Type of abuse	Status of alcohol use disorder		$\chi 2$	P
	AUD	Non-AUD		
History of any abuse				
Yes	29 (78.4%)	19 (24%)		
No	8 (21.62%)	60 (75.94)	9.061	0.003
History of verbal abuse				
Yes	27(72.9%)	14 (17.7%)		
No	10(27.1%)	28(82.3%)	12.381	0.001
History of physical abuse				
Yes	13 (35.13%)	10 (12.65%)		

No	24 (64.86%)	69 (87.34%)	1.223	0.269
History of sexual abuse				
Yes	12 (32.43)	11(13.92%)		
No	25 (67.56%)	68(86.07%)	0.371	0.542

Table 8. Among women with AUD, 78.4% reported any abuse (p = 0.003). However, only verbal abuse was significantly associated with AUD (p = 0.001). Although physical and sexual abuse were more common in women with AUD, the association was not statistically significant. The point to note is that any abuse and all forms of abuse are more common among those who have AUD.

4.4. Discussion

Overall, 22.8% of the women screened experienced any form of abuse. Non-alcohol-consuming women accounted for 3.8%, while alcohol-consuming women contributed 18.2%. Pregnant women who consume alcohol have approximately 6.7 times higher risk of experiencing abuse compared to non-users. The most common forms of abuse identified in this study included verbal, physical, and sexual abuse, representing 10.2%, 4.9%, and 4.6% respectively. This study also found that subjects with AUD were about twice as likely as those without to suffer any form of abuse from their spouse (p = 0.003). Further analysis of subtypes revealed that verbal abuse was most likely to be experienced by women with AUD (p = 0.001) when compared to other forms of abuse. It was also observed that most women suffered from multiple types of abuse. Although physical and sexual abuse were more prevalent among women with AUD in this study, these associations were not statistically significant, possibly due to underreporting or cultural stigma. Sexual abuse was also common among those without AUD. This study found that younger age between 15-30 years, lower educational level, here defined as "*no or primary level of education*", and informal occupational roles such as farming, increased susceptibility to abuse, and were significantly predictive of alcohol use. This study found that maternal old age, high educational status, and formal employment were protective factors, consistent with other studies. This underscores the importance of women's education and employment as a veritable tool against violence. However, the prevalence of abuse in this study is lower than the global prevalence of 27% posited by the WHO's global survey on IPV (Sardinha *et al.*, 2022), and significantly lower than reported findings from Kenya (Morris *et al.*, 2022) and Ethiopia (Gebrezgi *et al.*, 2017), which found prevalence of 60.3% and 40.8%, respectively. Among Nigerian studies, this finding was lower than the 27.1% reported by (Ezeudu *et al.*, 2019), 26.2% by (Ubom *et al.*, 2025), 21.8% Okonkwo *et al.* (2024) and 34.3% by Ashimi & Amole (2015), but higher than the 15.4% reported by (Okunola *et al.*, 2021). The differences in prevalence could be due to methodological differences and the fact that the researcher did not utilise a standardised abuse scale.

In terms of the pattern of abuse, this study found a prevalence of abuse lower than the WHO study, which found a prevalence of 9.2% for physical abuse, 18.7% for psychological abuse, and 5.5% for sexual abuse (Sardinha *et al.*, 2022) as well as findings by Sanz-Barbera (2018) who found a prevalence of physical/sexual abuse of 6.1%, psychological abuse of 28.1%. Nonetheless, it demonstrated similarity with the WHO study in returning the lowest prevalence for sexual abuse among the patterns of abuse (Sardinha *et al.*, 2022). Nevertheless, it returned a significantly lower prevalence in both international and African studies (Abramsky *et al.*, 2011). In Nigeria, Okonkwo *et al.* (2024) reported high prevalence of 72.4%, 35.6% and 32.2% for psychological, sexual, and physical abuse, while Ashimi and Amole (2025) reported 68.5%, 66.7% and 50.9% for verbal, psychological, and physical abuse, respectively. The discrepancy could be due to methodological differences in reporting.

The study highlights significant associations between certain socio-demographic variables and abuse among women who consume alcohol during pregnancy. It aligned with the findings of Sanz-Barbera *et al.* (2018), who found that IPV was associated with younger age and binge drinking by the woman. It also returned a similar finding to Morris *et al.* (2022) and Okonkwo *et al.* (2024), who both found that low education, increased maternal age, and maternal disharmony.

These findings align with broader evidence linking economic dependence, limited education, and male partner substance use to IPV. The significant correlation between AUD and verbal abuse underscores a potential cycle where alcohol use and abuse reinforce each other.

This study underscores the urgent need to address the issue, as it found a significant correlation between alcohol use and abuse. Interventions must therefore be contextualised within the socio-cultural and economic realities of this population. Community education, partner involvement, and socio-economic empowerment should accompany antenatal screening.

4.5. Limitations of the study

i. This was a facility-based study, which may hamper the external validity to some extent.

ii. The non-use of a validated abuse screening tool may have impacted the true prevalence of abuse in this study.

5. CONCLUSION

Abuse is a common occurrence among pregnant women, especially among those who use and abuse alcohol. Addressing these risk factors through integrated ANC services and community-based strategies is crucial for improving maternal health outcomes.

RECOMMENDATIONS

- Integrate IPV screening and alcohol use assessment into routine ANC.
- Design educational campaigns targeting young and low-

educated women.

- Empower women economically to reduce vulnerability.

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