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Alcohol consumption and use of contraceptives: Evidence from 2018 Nigerian Demographic and Health Survey in Nigeria

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Per capita alcohol consumption in Nigeria is high when compared with other countries in Africa. Alcohol induces social behaviors which include home violence, sexual harassment, unwanted pregnancy, and infidelity among couples. On the good side of it, couples who find themselves in alcohol consumption chose modern contraceptives use to prevent unwanted pregnancy. The objective of the paper is to examine the effect of alcohol consumption on modern contraceptive use in Nigeria. A probit regression model using data from the 2018 Nigerian Demographic and Health Survey was employed. The paper found that alcohol intake among couples has a significant effect on their decision to use modern contraceptives. The result also signified that educational level significantly affects the use of modern contraceptives. Other significant factors affecting modern contraceptive use were the partner's occupation, the number of living children per couple, and the wealth index. The paper recommended that counseling should be made at social gatherings for those who take alcohol to use contraceptives.

JEL CLASSIFICATION

D19; I10; I12

1 | INTRODUCTION

Alcohol consumption among young men and women in Nigeria is on the increase since the return of the country to civilian rule in 1999. World Health Organization (WHO, 2017) reveals that Nigeria is the second highest alcohol consuming country in Africa, while the study by Business Insider (2017) shows that Nigeria is ahead of all the countries in Africa in per capita alcohol consumption. The increase in the rate of alcohol consumption in Nigeria has increased alcohol-induced social behaviors like violence against the woman, sexual harassment, and infidelity among couples. These abnormal social behaviors are compounding the reproductive health problem in Nigeria, a country saddled with the high number of out of school children, child exploitation, and destitution.

Alcohol arouses sexual interest in both men and women because it increases the libido. Where the sex partners fail to control their

sexual emotion, unprotected sexual intercourse can lead to unintended pregnancy. In a country like Nigeria where contraceptive use is low among couples, heavy alcohol consumption is an important risk factor in the control of unintended pregnancy and family size (Blackstone & Iwelunmor, 2017; Nigerian Demographic and Health Survey, 2018). Minimization of unintended pregnancy is important to reduce some social misbehavior like abortion because some of the victims of unintended pregnancy in Nigeria choose to abort it (Lamina, 2015). Dutta, Shekhar, and Prashad (2015) point out that unintended pregnancy has a negative effect on maternal and child health because it can contribute to maternal mortality.

High incidence of poverty in Nigeria can be attributed to population health problems. According to the National Population Commission of Nigeria (NPC, 2016), Nigeria is growing at an annual average of 2.8% since 2013 which puts her as one of the countries with the fastest-growing population in the world. The country's projected

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population in 2015 was 186,939,754, making her the most populated country in Africa. Unfortunately, the country is not managing her resources very well to improve the lives and wellbeing of the people. This is because more than 50% of the people of Nigeria were extremely poor in 2009 (World Bank, 2019). Moreover, the country's life expectancy at birth is low at 53.88 years in 2017 (World Bank, 2019), and other health indicators show that undernourishment is a serious public health challenge (World Bank, 2017).

Contraceptive use has globally become an accepted measure for enhancing reproductive health to boost the economic status of households. Modern contraceptive use has helped in reducing unintended pregnancy, the risk of unsafe abortions, maternal mortality, and an improvement in women's educational opportunities. According to the World Health Organization (WHO, 2005), the increase in the awareness and use of modern contraceptives has led to a fall in the average number of children per woman globally. Similarly, a study in Pakistan by Habib et al. (2015) reveals that contraceptive use has a significant effect on unintended pregnancy. Unfortunately, the use of contraceptives to control unintended pregnancy is very low in Nigeria. From Nigerian Demographic and Health Survey (2018), less than 10% of sexually active women are using different contraceptive methods to control unintended pregnancy. If the country is to record major breakthroughs in improved health outcomes, and awareness campaigns on unintended pregnancy must be intensified.

Alcohol is an intoxicant that drives couples to an emergency sexual behavior. Many couples who are in contraceptive use in Nigeria do so because they consume alcohol and do not want to fall victim of unintended pregnancy. The objective of the researchers is to examine the effect of alcohol consumption on contraceptive use in Nigeria. The research finding will be useful in a reproductive health awareness campaign in Nigeria and some other developing countries who are sharing a similar experience with Nigeria.

2 | LITERATURE

The relationship between alcohol and population health is as old as the traditional Africans because the presentation of alcohol to an intended bride's family is the beginning of the marriage contract. Acceptance of alcohol at this early stage marks the beginning of a successful new family. In Igbo land, when alcohol is accepted by the immediate family of the intending bride, the extended family is invited to formally announce to them that one of their daughters is getting married. The quantity of alcohol increases in many folds depending on the tradition of the people. Therefore, in traditional African society, no alcohol no marriage, and consequently, no reproductive health as marriage is will not consummate (Akinbami & Anazodo, 2011).

While alcohol consumption and population health have a long history of the relationship, the effect of alcohol on population health has become a matter of concern in recent times. Due to the influx of brewed alcohol in Africa and Nigeria, the quantity of alcohol consumed per head has increased. At a social gathering, the youths engage in betting on the number of bottles of beer to drink (Dumbili, 2013). Some of them get drunk at the end of the

competition and become uncoordinated in what they do, especially for those who drive cars. Dumbili (2013) points out that drunk driving can lead to mortality, and excess alcohol has health consequences. Centre for Disease Control and Prevention (2019) maintain that excessive alcohol was responsible for about 88,000 deaths in the United States between 2006 and 2010.

Alcohol intoxicates but the level at which it intoxicates people differs across individuals, depending on the body's tolerance to alcohol (Galbicsek, 2019). When intoxicated, individuals exhibit different social behaviors. For the introverts, they overcome their shyness and become bold to engage women in the sexual relations, and in the extroverts, it arouses sexual interest, and in some other people, they may become violent (National children Alliance, 2019). National children Alliance (2019) attributes 90% of child abuse in the United States to alcohol-induced behavior. The assertion is consistent with the study by Abbey, Zawacki, Buck, Clinton, and McAuslan (2001) which discovered that 50% of the sexual abuse in America is alcohol-induced, and a study by Vargas (2017) linked childhood sexual abuse to alcohol. Similarly, Moncrieff, Drummond, Candy, Checinski, and Farmer (1996) found out that the majority of the victims of sexual abuse in America are addicted to alcohol.

The major problem of alcohol-induced sexual behavior to population health is that the sex partners go into sexual relation unconsciously and regret the action later. When the partners are not under contraceptives use, the action can lead to unintended pregnancy. Nigeria is a heavy alcohol consumption country (World Health Organization, 2016), and contraceptive use by both men and women is low (Chao and Huimin, 2019; Nigerian Demographic and Health Survey, 2018). Nigerian Demographic and Health Survey (2018) survey shows that up to 8% of the pregnancy in Nigeria is unintended. Unintended pregnancy can lead a couple to social ills such as abortion (Klima, 1998). High alcohol consumption in Nigeria with low modern contraceptive use puts the country at population health challenges such as unintended pregnancy and abortion.

There is evidence that people who drink alcohol are more likely to use contraceptives as a precaution against unintended pregnancy (Jones et al., 2019). Jones et al. (2019) in a study among college students discovered that college modern contraceptive use is higher among women who drink alcohol when compared with those who do not drink. This is because if a woman has taken or injected drugs that will last for a period, she becomes unbothered about alcohol-induced sex that can lead to unintended pregnancy. But Quigley et al. (2018) argued that alcohol can make sex dangerous because an intoxicated woman runs the risk of not taking her pill, or not taking the correct pregnancy preventive measure.

Above review of extant literature reveals that the effect of alcohol consumption on the decision to use modern contraceptives is scanty in both developed and developing countries, and the study has not been done in Nigeria. The objective of the study is to examine the effect of alcohol consumption on the decision to use modern contraceptives using 2018 Demographic and Health Survey data of Nigeria.

3 | MATERIALS AND METHOD

One of the developments in the 2018 Nigeria Demographic and Health Survey (NDHS) was the inclusion of some factors like alcohol consumption in the survey. According to Adebowale, Fagbamigbe, and Bamgboye (2012), Balogun, Owoaje, and Owoaje (2013), Igbodekwe et al. (2014), and OlaOlorun and Hindin (2014), it was difficult to conduct a study on the effect of alcohol on modern contraceptive use in Nigeria before 2018 because data on alcohol consumption were not available. The inclusion of alcohol consumption and many other factors in the 2018 survey provided research opportunities for public health scholars to fill some research gaps in some areas in population health. One of them is alcohol consumption.

The sample for the 2018 NDHS was a stratified sample that was selected in two stages. Each of the 36 states and the Federal Capital Territory was separated in order to achieve stratification. The survey identified 74 sampling strata and samples were independently selected in every stratum using a two-stage selection. A total of 1,400 Enumeration Areas (EA) were selected with probability proportional to EA size which was determined by the number of households. A total of 30 households was selected in every cluster through equal probability systematic sampling that gave a total of 42,000 households. Sampling weights were calculated based on sampling probabilities for each sampling stage and each cluster.

TABLE 1 Descriptive statistics of the variables

Factors	Response	Contraceptive use		
		Nonusers	Users	Total
Partner drinks alcohol	No	81.15	61.90	77.24
	Yes	18.85	38.10	22.76
Number of living children	Two or less	15.880	12.5	15.24
	Three and above	84.12	87.5	54.76
Wealth	Poorest	27.84	9.18	24.31
	Poorer	24.86	11.54	22.34
	Middle	21.41	21.70	21.47
	Richer	15.57	28.32	17.98
	Richest	10.32	29.26	13.90
Highest educational level	No education	56.46	17.61	49.1
	Primary	17.86	22.65	18.77
	Secondary	21.2	46.28	25.95
	Higher	4.48	13.46	6.18
Place of residence	Urban	29.85	54.28	34.47
	Rural	70.15	45.72	65.53
Region	North Central	16.35	18.89	16.83
	North East	22.80	13.74	21.08
	North West	34.41	11.04	29.99
	South East	9.23	20.17	11.30
	South South	8.19	10.53	8.63
	South West	9.02	25.63	12.17

^aSource: Authors' computation using Stata 13.

The 2018 NDHS included all women age 15–49 and all men age 15–59 in the sampled households. A total of 18,344 observations were used in estimating the effect of alcohol intake on contraceptive use. A probit regression model was used as it is the most appropriate for dichotomous observation. In this model, the contraceptive use was a function of the wealth of the household, alcohol intake of the couples, age of the couples, couple's education, couple's occupation, and the number of children. The model for the study is specified as:

$$\text{CONT} = f(\text{ALC}, \text{EDU}, \text{POC}, \text{AGE}, \text{NCL}, \text{ARFB}, \text{WID}), \quad (1)$$

where: CONT, contraceptive use; ALC, alcohol intake by the couples; EDU, educational level; POC, partner's occupation; AGE, age of partners in 5-year age group; NCL, number of child living; ARFB, age of respondent at first birth; WID, Wealth index.

Probit model uses the cumulative Gaussian normal distribution rather than the logistic function in calculating the probability of being in one category or not. The model has specified as:

$$P_i = \gamma(x_i\beta + \beta_\tau) = \int_{-\alpha}^{x_i\beta + \beta_\tau} \tau\{t\}dt, \quad (2)$$

where: γ is the cumulative standard distribution and τ is the standard lower density function.

The partial derivative of Equation (2) becomes:

$$\frac{dp_i}{dx_{ik}} = \gamma \{x_i \beta_i + \beta_r\} \beta_k. \quad (3)$$

In order to control for geographical effect, place of residence, region, and ethnicity were introduced in Equation (1) and it became:

$$\text{CONT} = f(\text{ALC}, \text{EDU}, \text{POC}, \text{AGE}, \text{NCL}, \text{ARFB}, \text{WID}, \text{PLR}, \text{RGN}, \text{ETHN}),$$

where: PLR, place of residence, that is, rural or urban; RGN, region; ETHN, ethnicity and other variables remain as defined before.

In the contraceptive use, women indicated the methods such as the traditional method, or a modern method or no method with their partner. This was categorized into nonusers and users. The variable was coded 0 for nonusers and 1 for users. All the data were sourced from the Nigerian Demographic and Health Survey (2018).

4 | RESULT

The descriptive statistics of the variables used in the analysis was important in order to understand the percentages of the users and nonusers of contraceptives in Nigeria. This was computed from the Nigerian Demographic and Health Survey (2018) as presented in Table 1.

Table 1 shows that 81.15% of the nonusers of contraceptives do not drink alcohol while only 18.85% drink alcohol. Among the contraceptive users, 69.9% do not take alcohol and 38.1% were taking alcohol. The descriptive statistics indicated that 77.4% of the total couples selected do not take alcohol. The number of children per couple indicated that 87.5% of couples with three and above children use contraceptives while 12.5% of the couples with two or fewer children use a contraceptive. Among those that do not use a contraceptive, 15.88% of the families that have two or fewer children do not use it and those with two or more children were 84.12%. Wealth inequality statistics showed that the percentage of rich people who use contraceptives is greater than that of the poor.

It indicated that the richer the couples are the more they use a contraceptive. The percentage of poorest, poorer, middle richer, and the richest using contraceptives were 9.18, 11.54, 21.7, 28.32, and 29.26%, respectively. The descriptive result further showed that 46.28% of those that use contraceptive were those at secondary school level of education. It was also observed that those in urban areas use more contraceptive than those in rural areas in Nigeria. The use of contraceptive based on regional level showed 25.63, 20.17, 18.89, 13.7411.04, and 10.53% for South West, South East, North Central, North East, North West, and South South, respectively.

The result of the probit regression results which showed the effect of alcohol intake by couples on contraceptive use was presented in Table 2. The contraceptive use was categorized into modern and traditional methods.

TABLE 2 Effect of alcohol intake on contraceptive use in Nigeria

	Contraceptive	Margeff	Modern	Margeff	Traditional	Margeff
Main						
Husband/partner drinks alcohol (<i>d</i>)	0.327*** (.000)	0.0966*** (.000)	0.207*** (.000)	0.0509*** (.000)	0.369*** (.000)	0.0365*** (.000)
Highest educational level	0.300*** (.000)	0.0834*** (.000)	0.281*** (.000)	0.0658*** (.000)	0.159*** (.000)	0.0135*** (.000)
Husband/partner's occupation (grouped)	0.00591** (.004)	0.00165** (.004)	0.00643** (.002)	0.00150** (.002)	0.000859 (.779)	0.0000728 (.779)
Respondent's occupation	0.00670** (.002)	0.00187** (.002)	0.00735*** (.001)	0.00172*** (.001)	-0.000443 (.921)	-0.0000375 (.921)
Age in 5-year groups	-0.0609*** (.000)	-0.0170*** (.000)	-0.0251* (.020)	-0.00587* (.020)	-0.117*** (.000)	-0.00991*** (.000)
Number of living children	0.0789*** (.000)	0.0220*** (.000)	0.0568*** (.000)	0.0133*** (.000)	0.0874*** (.000)	0.00740*** (.000)
Age of respondent at first birth	0.00598 (.059)	0.00167 (.059)	-0.00968** (.004)	-0.00226** (.004)	0.0376*** (.000)	0.00318*** (.000)
Wealth index combined	0.189*** (.000)	0.0527*** (.000)	0.143*** (.000)	0.0334*** (.000)	0.184*** (.000)	0.0156*** (.000)
Observations	18,344	18,344	18,344	18,344	18,344	18,344

Note: Marginal effects; *p*-values in parentheses; (*d*) for discrete change of dummy variable from 0 to 1.

**p* < .05.

***p* < .01.

****p* < .001. ^aSource: Authors' computation using Stata 13.

TABLE 3 Effect of alcohol intake on contraceptive use in Nigeria controlling geographical factors

	Contraceptive	Margeff	Modern	Margeff	Traditional	Margeff
Main						
Husband/partner drinks alcohol (<i>d</i>)	0.313*** (.000)	0.0915*** (.000)	0.194*** (.000)	0.0470*** (.000)	0.354*** (.000)	0.0338*** (.000)
Highest educational level	0.275*** (.000)	0.0758*** (.000)	0.261*** (.000)	0.0604*** (.000)	0.141*** (.000)	0.0116*** (.000)
Husband/partner's occupation (grouped)	0.00516* (.011)	0.00143* (.011)	0.00619** (.003)	0.00143** (.003)	−0.000455 (.887)	−0.0000374 (.887)
Respondent's occupation	0.00682** (.002)	0.00188** (.002)	0.00710** (.001)	0.00164** (.001)	0.000494 (.913)	0.0000406 (.913)
Age in 5-year groups	−0.0704*** (.000)	−0.0194*** (.000)	−0.0334** (.002)	−0.00775** (.002)	−0.125*** (.000)	−0.0103*** (.000)
Number of living children	0.0857*** (.000)	0.0237*** (.000)	0.0632*** (.000)	0.0146*** (.000)	0.0948*** (.000)	0.00780*** (.000)
Age of respondent at first birth	0.00560 (.080)	0.00155 (.080)	−0.00908** (.007)	−0.00210** (.007)	0.0361*** (.000)	0.00297*** (.000)
Wealth index combined	0.156*** (.000)	0.0430*** (.000)	0.121*** (.000)	0.0281*** (.000)	0.143*** (.000)	0.0118*** (.000)
Type of place of residence	−0.226*** (.000)	−0.0623*** (.000)	−0.189*** (.000)	−0.0437*** (.000)	−0.160*** (.000)	−0.0132*** (.000)
Region	0.0445*** (.000)	0.0123*** (.000)	0.0254*** (.000)	0.00589*** (.000)	0.0680*** (.000)	0.00559*** (.000)
Ethnicity	0.00242*** (.000)	0.000668*** (.000)	0.00268*** (.000)	0.000620*** (.000)	0.000371 (.406)	0.0000305 (.405)
Observations	18,324	18,324	18,324	18,324	18,324	18,324

Note: Marginal effects; *p*-values in parentheses; (*d*) for discrete change of dummy variable from 0 to 1.

**p* < .05.

***p* < .01.

****p* < .001.^aSource: Authors' computation using Stata 13.

The marginal effects of alcohol intake on modern and traditional use of contraceptives were 5.1 and 3.65%, respectively. The *p*-values for both modern and traditional methods indicated that alcoholic intake significantly affected contraceptive use in Nigeria. A unit increase in the intake of alcohol increased contraceptive use by 33%. In the modern method, a unit increase in alcohol intake increased contraceptive use by 21% while that of the traditional method showed an increase in contraceptive use by 37%.

The level of education significantly affected the use of contraceptives in both the modern and that of traditional methods. The marginal effect of an increase in the level of education on modern use of contraceptives was 28.1% while that of traditional was 15.9%. The result signified that educational level significantly affects the use of contraceptives in Nigeria. Other variables that significantly influence the use of contraceptives were the partner's occupation, the number of living children per couple, and the wealth index. An increase in the partner's occupation increases contraceptive use by 0.006, and the increasing number of living children of the couple increases contraceptive use by

0.079, while the increase in wealth increases contraceptive use by 18.9%, respectively.

Place of residence (urban or rural), region, and ethnicity were introduced in order to control for the geographical factors. The result of this was presented in Table 3. Place of residence, region, and ethnicity affected contraceptive use by −22.6, 4.45, and 0.2%, respectively. Place of residence and region have a significant effect on both modern contraceptive use and traditional methods, and region significantly contributes to the use of contraceptive. However, ethnicity as a control variable has an insignificant effect on the use of the traditional methods of contraceptive but a significant effect on the use of modern methods.

5 | CONCLUSION

Indifference toward modern contraceptives use and its consequence on reproductive health in developing countries motivated the interest in this study. Laissez faire attitude toward modern contraceptive use

contributed to many of the unwanted pregnancies in many developing countries like Nigeria. Rising cases of unwanted pregnancy led to the springing up of baby factory in almost all the states in Nigeria, as well as high cases of destitution, child trading, a high number of out of school children, and household poverty. Other social vices associated with the uncontrolled pregnancy are sex abuse, abortion, violence against the child, and child labor and exploitation.

Alcohol is a stimulant that pushes people into unprotected sexual behavior. Some couples who are used to alcohol intake choose to go for modern contraceptives as a protective measure against the consequences of alcohol-induced sexual behavior. The study examined the effect of alcohol consumption on contraceptive use by couples in Nigeria with data sourced from the 2018 Nigerian Demographic and Health Survey. Finding suggests that alcohol has a significant effect on the decision to use modern contraceptive in Nigeria. Based on the finding, the paper recommends that reproductive health counseling should be introduced at social gatherings and event centers in Nigeria and other developing countries to encourage those who take alcohol to also go for modern contraceptives to overcome those consequences of alcohol-induced sexual behavior.

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