Association between Socio economic Factors and Contraceptive Use among Married Women in Guinea and Mali: An Examination of the Demographic and Health Survey Data 2018

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Capstone

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Table of Contents

Table of figures:

Abstract:

Introduction: Unintended pregnancies and unsafe abortions can seriously affect any sexually active women and have negative impacts on their personal and conjugal life, their families, and societies. unsafe abortions cause the death of thousands of women every year and lead millions more to suffer long-term reproductive problems, including infertility. Rarely any study has explored and compared the prevalence and associated factors of contraceptive use among married women in these two countries. **AIM**: Therefore, this study seeks to determine the association between socio economic factors and contraceptive use in two sub-Saharan African countries: Guinea and Mali. METHODS: Relevant data on contraceptive use among married women was extracted from the Guinean and Malian 2018 Demographic and Health Survey. Quantitative data was analyzed using the IBM SPSS STATISTICS version 28.0.1.1

RESULTS: 89% of our respondents from Guinea and 85% of those from Mali were using no contraceptives. 35% of Malians had the intention to use it later against only 21% from Guinea and difference was statistically significant($p<0.001$). In Guinea, the more women are rich the more they tend to use contraceptives (richest 17%, richer14%and the middle class 9%). Only those who know about modern contraceptives use any type of contraceptives and all those who only know folkloric, traditional know and those who know no method do not use them. Compared to Muslim women, those who have no religion are 8 times susceptible of using contraceptives. These odds are only 5 times for animists and 2,6 times for Christians. The multivariate analysis shows that Guinea respondents have increased the odds of using

contraceptives (OR=1.37; 95% CI 1.26-1.49) as compared to Mali and the difference was statistically significant at $p < 0.001$. This is a critical finding compared to the univariate analysis. The poorest are more likely to use contraceptives than other classes; followed by the poorer and

4

the difference was statistically significant. **DISCUSSION:** In Guinea and Mali, wealth and education have been consistently found to be positively associated with contraceptive use. These findings are constant with previous studies indicating that wealth and education have been reliably found to be completely correlated contraceptive use [Budu et al., 2022]. This may be due to the fact that rich people have more access to health facilities and health education. These results strongly advocate that educational programs should target the poor and those with low educational attainment to encourage family planning.

<div align="center">**Chapter I:**</div>

<div align="center">**Introduction**</div>

1.a Background:

Unintended pregnancies and unsafe abortions can seriously affect any sexually active women and have negative impacts on their personal and conjugal life, their families, and societies as a whole [Anik et al., 2022]. unsafe abortions cause the death of thousands of women every year and lead millions more to suffer long-term reproductive problems, including infertility. This trend is not likely to diminish until women's need for modern contraception is met [Anik et al., 2022].

In 2012, at the 'London Summit for Family Planning' the global community launched the Family Planning 2020 (FP2020) initiative which is built on the principle that all women, regardless of their place of residence and economic status, should enjoy their human right to access safe and effective, voluntary contraceptive services and commodities [Anik et al., 2022]. The FP2020 movement focuses on 69 poorest countries in the world, and consequently, the global coverage of modern contraceptives among reproductive age married women has been increased by 30.2 million between 2012 and 2016 [Anik et al., 2022].

In low and middle-income countries, the burden of maternal mortality ratio (MMR) is estimated to be about 415 maternal deaths per 100,000 live births. That number is 16 times higher in developed countries. Sub-Saharan Africa has the highest rates of Maternal mortality. In that region, one woman dies out of every 37 women while that rate is only 1 in 7800 women in developed countries. Many sub-Saharan countries have seen their total fertility rate (TFR) declined. However, in some countries, it remains stagnant [Tesema et al., 2022].

Globally, more than 1 billion women need family planning, 851 million women are currently using a modern contraception, 85 million are using a traditional method, and 172 million of them are not using any kind of contraception [Tesema et al., 2022].World reproductive age women (15–49) using contraception increased in the last decades, but some regions have not made a huge progress. In regions like Latin and North America, Asia, and Australia the use of contraception varies from from 50 to 60%, while in Northern Africa and Western Asia it is about 35.1%, in sub-Saharan Africa it is 34.1%, and Oceania 30.7%. The use of modern contraceptive among married women in sub-Saharan Africa ranges from 4 to 52%. Socio-demographic characteristics like age, residence, education level, religion, level of income, employment, obstetric history related variables such as parity, number of living children, number of antenatal visits, knowledge of methods, and husband involvement have been reported as determinants of contraceptive utilization [Tesema et al., 2022].

Therefore, this study seeks to determine the association between socio economic factors and contraceptive use in two sub-Saharan African countries: Guinea and Mali.

1b. Purpose of study:

Rarely any study has explored and compared the prevalence and associated factors of contraceptive use among married women in these two countries. The Demographic Health Survey (DHS) funded by the United States Agency for International Development (USAID), has collected nationally representative data contraceptive use in many countries around the world including Guinea and Mali.

The Demographic Health Survey contains a group of questions that serve as indicators of the influence of socio-economic factors on contraceptive use among married women. The primary

purpose of this study is to analyze the Measure Demographic and Health Survey (MDHS) towards contraceptive use among married women in west African countries. In Mali only 17.1% of currently married women within the reproductive age are contraceptive users and in Guinea it is 11%

First, the study reviews the literature for an accurate understanding of the issue of unwanted pregnancies among married couples in these two countries and analyzes the factors influencing the use of contraceptives. Second, the study examine the factors of Guineans and Malians associated found in the MDHS survey in 2018 and display the results by, age, area of residency, education level, religion level of income, employment ,obstetric history, knowledge of contraceptive methods, and husband involvement. Also, a comparative analysis is conducted to underline possible similarities and discrepancies between respondents in these two sub-Sahara African countries regarding contraceptive use among married women. This study is important because Unwanted pregnancies and unsafe abortions can seriously affect any sexually active women and have negative impacts on women's personal and conjugal life, their families, and societies.

The results of this study will help shed light on how different factors can explain the difference in contraceptive use in these two neighboring countries. As a final point, findings can help inform directions for future efforts to increase the use of contraceptives in this group and propose recommendations for public health interventions to reduce the prevalence of unwanted pregnancies in Guinea and Mali.

1c. Research Questions

The main research question is whether the use of contraceptives among married women is influenced by the same factors in Guinea and Mali in terms of selected categorical and continuous variables. To reach a conclusion, the following questions will be addressed:

Question #1: What percentage of married women in the 2018 sample use contraceptives in other to avoid unwanted pregnancies in Guinea and Mali.

Question #2: How do the factors influencing contraceptive use differ between Guinea and Mali?

CHAPTER II

REVIEW OF THE LITERATURE

Several findings have revealed that, Unplanned pregnancy and short inter-pregnancy spacing are the leading causes of maternal and child death in sub-Saharan Africa and family planning through contraceptive use is a low-cost, high-impact public health and development strategy to improve maternal and child health.

The literature review examines the findings about contraceptive use in African countries to understand about unwanted pregnancies in the continent. The following chapter is dedicated to presenting scientific literature that supports inclusion of the variables of interest in this study. Hence, this section looks at the prevalence of unwanted pregnancies in Guinea and Mali among married women by age, residence, education level, religion, level of income, employment, obstetric history related variables such as parity, number of living children, number of antenatal visits, knowledge of methods, and husband involvement and underlines the importance of contraceptive use in preventing maternal and child mortality and morbidity by exploring the factors influencing the use of contraceptives.

Contraception is a way to prevent unwanted pregnancy and helps couples achieve their reproductive goals that enable them to exercise their reproductive rights, spacing of birth interval, limit the number of children, and reduces maternal and child morbidity and mortality related to complications of unwanted pregnancy [Tesema et al., 2022].

2a. Knowledge about unwanted pregnancies and unsafe abortions:

In 2019, only one quarter of Sub-Sahara African women used some forms of contraceptive. That lack of contraceptive use exposed those women to unwanted pregnancies. The world health Organization estimates that around 40% of pregnancies were unplanned that year. High fertility poses health risks for mothers, children, substantially slow economic growth, and increases environmental degradation. As the fertility rate remains high, the youth dependency ratio also increases exponentially. In low and middle-income countries particularly in Africa, continued rapid population growth presents a challenge for achieving sustainable development. Research shows that couples often disagree about the desirability of pregnancy and the use of contraceptives [Tesfa et al., 2022;].

The World Health Organization (WHO) defines unsafe abortion as a procedure of pregnancy termination either by persons lacking the necessary skills or in an environment that does not conform to minimal medical standards or both. Unsafe abortion is a neglected problem of health care in developing countries. Despite technological advancements in health care, unsafe abortion remained essentially unchanged worldwide. Unsafe abortion is identified as one of the major causes of maternal morbidity and mortality. In Sub-Saharan Africa (SSA), abortion is more common, and it tends to be clandestine and unsafe that has a substantially contribution to maternal mortality [Tesfa et al., 2022;].

2b. age: Haq et al., 2017 in a study in Bangladesh after using a regression analysis revealed that in 1993–1994, women aged 20–24 years were 60% (OR = 1.60, 95% CI = (1.35, 1.90)) more likely to use contraception than the women aged 15–19 years. In 2004 and 2014, the trend also starts with women aged 20–24 years. According to BDHS 1993–1994, women aged 45–49 were only 3% (OR = 1.03, 95% CI = (1.07, 1.63)) more likely to use contraceptives than women aged 15–19 years, while in 2014, the odds were 64% (OR = 0.36, 95% CI = (0.30, 0.42)) less likely. The findings of the study provide evidence that contraceptive use decreases with age, indicating older women were more reluctant to use contraceptives than their younger counterparts. This type of relationship between age and contraceptive use has been observed like another existing study. Consistent increase of contraceptive use rate from age of 25 to 44 years indicated that in the reproductive period, the better part of women reached their desired number of children and then were willing to terminate a pregnancy by using modern contraceptive methods [Haq et al., 2017].

2c. Residence area: In 2014, the same study by Haq et al.,showed that the rural women were 16% less likely to prefer contraceptives than their urban counterparts [Haq et al.,].

2d. Education: The same study revealed that women who attained primary education and again those having secondary and higher levels of education were more likely to use contraceptives than women having no education In 2014 [Haq et al.,.].

2e.Religion: Yeatman & Trinitapoli, in 2008 in a study demonstrated that religion does not influence contraceptive patterns through top-down denominational edicts. The authors stated that if they limited their conceptualization of religious influences to denomination, they might conclude that religion plays little role in contraceptive use. It is only by taking a more

comprehensive view of what religion means to those people that they find strong relationships between religion and contraception in rural Malawi [Yeatman & Trinitapoli, 2008]**.**

The study found that Leaders of all religions approve the use of modern contraceptive. According to them Catholic leaders are least likely to approve it . Muslim leaders are the most likely to approve of such practices. The actual behavior of women within the two religions is different and operates in the opposite direction. They found that Catholic women are among the most likely to use contraception than Muslim women [Yeatman & Trinitapoli, 2008].

2f. level of income: Mankelkl & Kinfe, in 2023 found in a study that among the wealth index, the results showed that for the 2004 Bangladeshi Demographic and health survey, women from middle and rich households were more likely to use contraceptives than women in the poor households. the level of household wealth has a significant impact on access to education, basic healthcare services, and health information [Mankelkl & Kinfe, 2023].

2g. Obstetric history: Geltore & Lakew, 2022 in a study revealed that the number of currently living children was significantly associated with using contraceptive. Other researchers had found similar findings in a study conducted in different countries [Geltore & Lakew, 2022]. This finding may be due to the fact that those with larger families could have achieved the number of children they wanted to have and decided to use contraceptive to limit further pregnancies [Geltore & Lakew, 2022].

2h. Husband involvement: According to a study realized by Geltore & Lakew, in 2022 the educational status of the husbands is one factor for men's involvement in family planning; those male partners who can read and write were 2.97 times more likely to involve in modern family planning utilization compared to those who have diploma and above education level (AOR: 2.97, 95% CI: 1.46, 6.04**). [**Geltore & Lakew, 2022**].**

2i. employment: Behrman & Gonalons-Pons, 2020 in a study shows a significant negative linear association between women's wage employment and the total fertility rate at the country level in every major world region. Furthermore, there is a negative association between women's employment and unmet need for family planning and a positive association between women's country-level employment and modern contraception use in all regions**.** The study suggests important variation depending on the type of employment. There is a negative correlation between nonagricultural employment and TFR and unmet need for family planning, and a positive correlation between nonagricultural employment and contraceptive use. On the other hand, there is a negative correlation between agricultural employment and contraceptive use [Behrman & Gonalons-Pons, 2020].

2j. Theoretical basis of the study: Exploring contraceptive use among married women in Guinea and Mali is important. This study will utilize the Social Ecological Model as a guiding theoretical framework, as it provides important conceptualization of the barriers and enablers that influence the use of contraceptive at the individual, interpersonal, community, and societal levels. As a theoretical model, the Social Ecological Model is an approach that unpacks the factors that shape behavior by incorporating multiple levels of influence to understand where best to intervene to prevent or promote behavior.

CHAPTER III

METHODS AND PROCEDURES

3a. Data Source:

The data for this study were obtained from the Demographic and Health Survey2018 (DHS2018). The Demographic and Health Survey (DHS) project, funded by the United States Agency for International Development (USAID) with support from other donors and host countries, has conducted over 260 nationally representative and internationally comparable household surveys by advancing global understanding of health and population trends in more than 90 countries since 1984. The Demographic and Health Survey has collected, processed, analyzed and disseminated surveys in Sub- Saharan Africa including Guinea and Mali. The three core questionnaires in DHS surveys are the Household Questionnaire, the Women's Questionnaire, and the Men's questionnaire. There are also several standardized modules for countries with interest in other topics, such as malaria, domestic violence or maternal mortality and HIV/AIDS. Also, all these additional modules are incorporated into the Household, Women's, or Man's questionnaires. DHS surveys are designed to collect data on marriage, fertility, family planning, reproductive health, child health, and HIV/AIDS.

The household, the woman's, and the men's questionnaire from an analytical point of view, contain the analytical units of household information, household member's information, women's information, children's information and men's information.

Our study was exempted from review process because the survey was anonymous and was pre-authorized for use by the Measure Demographic and Health Survey.

3b. Study population:

For Mali, a nationally representative sample of 10,519 women aged 15-49 in 9,510 selected households and 4,618 men aged 15-59 and half of the selected households were interviewed. This represents a response rate of 98% of women and 96% of men. The sample design for the 2018 EDSM-VI provides reliable estimates at the national level, for urban and rural areas, for each of the 8 regions and Bamako.

For Guinea, a total of 8 020 households were selected for the survey. Among them, 7 979 women were busy during the survey and only 7 912 were interviewed. In the interviewed households 10 987 eligible women were identified for the individual interviews and among them 10 874 were interviewed (Guinea EDS 2018).

3c. Study design and Variable List:

We will use Cross-tabulation procedures to describe the distribution of the categorical variables of interest and use independent T test procedures to describe the distribution of the continuous variables of interest across Guinea and Mali.

Independent variables:

Socio economic variables: The socio economic variables will be measured by country, age, residence area, level of education, religion, level of income ,employment, obstetric history .

Country: For country we will record Guinea=1 and Mali=2 and then compute this new variable into the final dataset to run the appropriate analysis to compare the two countries.

Current age: We will use women's current age as a continuous variable, and we also categorize age as age group to predict an association between specific age groups and contraceptive use.

Residence area: Residence area will be categorized as urban=1 and rural=2.

Education level: we will classify education level into four groups no education, primary education, secondary education, and higher education level.

Religion: Religion will be categorized as Muslim=1, Christian= 2 .

Dependent variable: we will use contraceptive use as the dependent variable for the univariate and multivariate analysis.

3d. Statistical Methods:

We will use the Statistical Package for the Social Sciences (SPSS) version 19.0 to truncate, organize and analyze the data in DHS 2018 for Guinea and Mali. we will use the independent T test to compare the means and the standard deviations for the continuous variables. For p-value <0.05 we will assume the difference is significative.

- *Logistic Regression:*

Contraceptive use is our dependent variable in the models. Binary logistic regression will be conducted to determine the degree of association between the dependent variable with the selected independent variables such as socio-economic variables (country, current age, residence, education level, religion, level of income, obstetric history), knowledge about contraceptive. Univariate and multivariate analyses will be performed to test the significance of all association between the independent and the dependent variables. Univariate analysis will consider each independent variable at a time and its association with a dependent variable.

- *Multivariate data analysis*

The multivariate data analysis involves observation and analysis of all the statistical variables of interest at the same time. The main purpose of this procedure is to determine which variable is a good predictor of the relationships hypothesized according to the association with the outcome variables. A multiple logistic regression will determine which predictors are important and how

they affect contraceptive use among married women. Moreover, this complex analysis will permit us to calculate an odds ratio and report a p-value that measures the importance of a predictor variable on the response variable controlling for potential confounders. Throughout all the analysis performed, a p value of 0.05 and confidence interval of 95% will be used to determine any statistical significance.

CHAPTER IV

RESULTS

4a. Basic socio demographic: The demographic characteristics of the respondents who were included in the study with respect to age, area of residence, educational level, wealth index religion are presented in table 1. A total of from Guinea and from Mali participated in the survey.

Table 1: Basic socio demographic characteristics of married women from Guinea and Mali.

Table 1: Basic socio demographic characteristics of married women from Guinea and Mali.

Variables	Guinea	Mali	p-value
*Age (in years)	*28.53 ±9.77	*28.27 ±2.12	<0.005
Area			
Urban	37%	NA	
Rural	63%	NA	
Education level			<0.001
No education	69%	66%	
Primary	12%	13%	
Secondary	16%	19%	
Higher	3%	2%	
Wealth index			<0.001
Poorest	20%	18%	
Poorer	19%	18%	
Middle	19%	19%	
Richer	21%	22%	
Richest	21.35%	24%	
Religion			<0.001
Muslim	89%	95%	
Christian	10%	1%	
Animist	0.00%	1%	
No religion	1%	0.00%	
Others	0.00%	3%	

*Mean and standard deviation of the respondents' current age.

The results indicated that were more people living in rural areas in Guinea (62.8%) compared to urban areas. These statistics could not be obtained for Mali because since 2012, 60% of its territory is occupied by rebels and Terrorists.

The majority of our respondents had no education in both countries (69% in Guinea and 66% in Mali).

The mean age was almost similar (28 years old) and was statistically significantly different between Guinea and Mali (p<0.001). In both countries, the richest represented most of the respondents and the difference is statistically significant between the two nations (p<0.001). Muslims represented the majority of our study population in both countries (Guinea 88.6% ,Mali 95.2%) and the difference between the 2 countries is statistically significant .

Table 2: Contraceptive use among married women in Guinea and Mali

Variables	Guinea	Mali	p-value
Current use by method types			<0.001
No method	89.2%	85.5%	
Folkloric method	10%	3%	
Traditional method	20%	4%	
Modern method	10.5%	13.8%	
Intention to use			<0.001
Use later	21.10%	35.40%	
Unsure about use	11.40%	12.10%	
Does not intend	67.50%	52.50%	

89% of our respondents from Guinea and 85% of those from Mali were using no contraceptives. These non-users were followed by women who used modern contraceptives methods (10.5% in Guinea and 14% in Mali. When asked about their intentions to use contraceptive methods in the future ,67.5% from the Guinea and 52.5% from Mali said no. 35% of Malians had the intention to use it later against only 21% from Guinea and difference was statistically significant(p<0.001).

Table3: intention to have last child.

variables	Guinea	Mali	P<0.005
Wanted then	83.1%	85.3%	
Wanted later	12.45	11.8%	
Wanted no more	4.5%	2.9%	

The majority of our respondents from both countries said they wanted their last child (83% in Guinea and 85% from Mali) and the difference was statistically significant (p<0.005). 12.45% from Guinea said they want it.

Table 4: Current contraceptive method used by country.

Method use	Guinea (p<0.001)	Mali (p<0.001)	
Not using	89.20%	85.50%	
Pill	1.70%	1.90%	
IUD	0.50%	0.90%	
Injections	1.90%	4.50%	
Male condom	1.30%	0.20%	
Female sterilization	0.10%	0.20%	
Male sterilization	0.00%	0.00%	
Periodic abstinence	0.10%	0,1%	
Withdrawal	0.10%	0.30%	
Other traditional	0.10%	0.35%	
Implant/Norplant	2.10%	6.00%	
Lactational amenorrhea	2.60%	0.10%	
Female condom	0.00%	0.00%	
Emergency contraception	0%	0.00%	
Other modern method	0.00%	0.00%	
Standard days method	0.30%	0.10%	

Concerning the use of contraceptives, 89.2% from the Guinea sample and 85.5% from that of

Mali were using no contraceptive in General. Lactational amenorrhea came second as the most

22

used contraceptive in Guinea against 0.1% in Mali with a difference that is statistically
significant. Implant/ Norplant was the most contraceptive method used in Mali followed by
injection methods.

Table 5: Summary of pregnancy prevention usage.

	Ever use	Guinea	Mali
Prevention methods usage	No	80.30%	72.90%
	Yes	3.10%	4.60%
	Yes, used in calendar	16.60%	22.50%

In the two countries, there were more married women who have never used anything to avoid
getting pregnant or delaying pregnancy (Guinea 80.3%, Mali 72.9%) followed by those who
used in calendar (Guinea :16.6% ,Mali 22.5%).

Table 6: Distribution of selected independent variables by any contraceptive use from Guinea

variables	Contraceptive use (%)	No contraceptive use (%)	p-value
Wealth index			<0.001
poorer	7.45%	92.55%	
Middle	8.88%	91.11%	
Richer	14.75%	85.25%	
Richest	17.20%	82.80%	
Knowledge of any contraceptive			<0.001
Knows no method	0.00%	100%	
Knows only folkloric	0.00%	100%	
Knows only traditional	0.00%	100%	
Knows modern	13.24%	86.76%	
Educational level			<0.001
No education	9.00%	90.99%	
Primary	10.77%	89.23%	
Secondary	15.82%	84.18%	
Tertiary	25.62%	74.38%	

In Guinea, the more women are rich the more they tend to use contraceptives (richest 17%, richer14%and the middle class 9%). Only those who know about modern contraceptives use any

type of contraceptives and all those who only know folkloric, traditional know no method do not use them.

Table7: Mali Distribution of selected independent variables by any contraceptive use

Variables	Contraceptive use (%)	No contraceptive use (%)	p-value
Wealth index			<0.001
poorer	7.82	92.18	
Middle	9.53	90.47	
Richer	14.22	85.77	
Richest	18.17	81.83	
Knowledge of any contraceptive			<0.001
Knows no method	20.01	79.99	
Knows only folkloric	0.00	100.00	
Knows only traditional	6.67	93.33	
Knows modern	0.00	100.00	
Educational level			<0.001
No education	16.62	88.34	
Primary	15.75	84.24	
Secondary	22.60	77.40	
Tertiary	27.45	72.55	

In Mali 18% of those who call themselves richest use contraceptives, compared to 14% of those who are richer. 20% of those who do not know any contraceptive claim to use them followed by those who only know about traditional contraceptive methods.

The more married women are educated, the more they tend to use contraceptives (27% tertiary education,22.6% of those who have secondary education but those who have no education tend to use more contraceptives than those who only have a primary education).

4.b: Univariate analysis:

Table 3: Univariate analysis of association between the uses of any contraceptive with other factors among married women in Guinea and Mali.

Variables	Guinea		Mali	
	OR	95% CI	0R	95% CI
Respondent's current age	0.99	0.99 - 1.00	1.02	1.01 - 1.01
Wealth index				
Richest (ref.)				
Richer	0.25	0.19 - 0.30	0.33	0.27 - 0.41
Middle	0.39	0.32 - 0.47	0.42	0.35 - 0.50
Poorer	0.47	0.39 - 0.56	0.66	0.56 - 0.77
Poorest	0.83	0.70 - 0.97	0.88	0.76 - 1.03
Level of education				
Highest (ref.)				
Secondary	0.28	0.22 - 0.37	0.35	0.25 - 0.47
Primary	0.35	0.26 - 0.47	0.49	0.35 - 0.69
No education	0.54	0.42 - 0.71	0.77	0.55 - 1.07

Table 9: Contraceptive by place of residence in Guinea:

Locality	OR	p-value
Urban (ref)		
rural	1.12	0.39

Compared women living in urban areas, those living in rural areas are 12 % more susceptible of using contraceptive. These statistics are not available for Mali since 60% of its territory is occupied by rebels and terrorists and cannot be accessed by data collectors.

Table10: Religion (Guinea)

Variables	OR	P-value
Muslim (ref)		
Christians	2.59	<0.001
Animist	4.69	<0.193
No religion	7.84	<0.001

Compared to Muslim women, those who have no religion are 8 times susceptible of using contraceptives. These odds are only 5 times for animists and 2,6 times for Christians. We can say that being Muslim is negatively correlated with using contraceptives.

4.c Bivariate Analysis:

Table 11: Multivariate analysis of association between any contraceptive use with some independent variables.

Variables	OR	95% CI
Country		
Mali(ref.)		
Guinea	1.37	1.26-1.49
Wealth index		
Richest (ref.)		
Richer	0.99	0.89-1.12
Middle	1.4	1.23-1.6
Poorer	1.93	1.67-2.23
Poorest	2.62	2.23-3.068
Educational level		
Tertiary (ref.)		
Secondary	1.45	1.2-1.78
Primary	1.93	1.53-2.4
No education	2.2	1.77-2.7

The multivariate analysis shows that Guinea respondents have increased the odds of using contraceptives (OR=1.37; 95% CI 1.26-1.49) as compared to Mali and the difference was statistically significant at p < 0.001. This is a critical finding compared to the univariate analysis. The poorest are more likely to use contraceptives than other classes; followed by the poorer and the difference was statistically significant.

There are increase odds of using contraceptive for participants who have no education living as compared to those who are educated, and the difference was statistically significant.

4,d. DISCUSSION

The main objective of the present study was to identify differences in the factors driving the use of contraceptives the Republic of Guinea and Mali. Contraceptive use is an integral indicator birth control.

Guinean and Malian married women participants of the DHS do not use contraceptives in general.

In Guinea and Mali, people with no education represented the majority of the married women interviewed. This finding may be explained by the poor level of literacy in sub-Saharan Africa.

As a matter of fact, according to United Nations Educational, Scientific and Cultural Organization (UNESCO) - Institute for Statistics, more than 1 in 3 adults cannot read in Sub Saharan Africa and the literacy rate is 63% (UNESCO, 2010).

Most of the respondents that used any contraceptive came from rural areas. The presence of community health centers in rural areas help increase awareness about family planning. Women in rural settings were found to have greater likelihood of intention to use contraceptives compared to those in urban settings (AOR=1.10, 95% CI= 1.07 to 1.14) [Budu et al., 2022] .

30

In both countries, the 4 socio economic factors were nearly equally distributed while in most African countries, the poorest represent the large majority. This may be due to the fact that respondents are asked about their socio-economic factors and may give wrong information either because they do not know how to classify economic status or because they would not like to classify themselves as poor.

Most of our respondents do not intend to use any contraceptive method in the future.

Budu et al., 2022 et al, in a systematic review found that The pooled prevalence of intention to use contraceptives among married and cohabiting women in the 29 countries was 41.46% [Budu et al., 2022a] .

These results may be because Guinea and Mali are both Muslim countries.

In Guinea, married women in rural areas are 12% more likely to use contraceptives than those in urban areas. In 2014, a study by Haq et al, showed that the rural women were 16% less likely to prefer contraceptives than their urban counterparts [Haq et al.,]. This change may be due to the fact there are more community health centers in the country campaigning for family planning.

In Guinea and Mali, wealth and education have been consistently found to be positively associated with contraceptive use. These findings are constant with previous studies indicating that wealth and education have been reliably found to be completely correlated contraceptive use [Budu et al., 2022]. This may be due to the fact that rich people have more access to health facilities and health education.

These results strongly advocate that educational programs should target the poor and those with low educational attainment to encourage family planning.

Results from the logistic regression analyses showed that for both countries there was a negative association between knowledge of modern methods and contraceptive use. One of the reasons

for this might be the fact that women in Africa do not have social influence regarding contraceptive use It is very difficult for a married woman to impose the use of contraceptive to her husband.

Compared to Muslim women all others are more likely to use contraceptive.

 An important finding in this univariate analysis is that in Guinea, respondents are 34% more likely to use contraceptive than Mali. However, after running the multivariate analysis, we demonstrated that Guinea participants are 37% more likely to use contraceptive.

4.e: Study Limitations

This study relies on a large nationally representative sample, with a high response rate in two West African countries. To our knowledge, this is the first study to compare the influence of socio-economic factors on contraceptive use in the two countries.

 Data were collected in 2018 at a national level for Guinea but for Mali, the study could only take place in the areas controlled by the government since about 60% of its territory is occupied by rebels and Terrorists since 2012.

One other limitation of the study is the use of secondary data. Even though the demographic and health survey is a robust and well sampled data set, it provided only a few ways of looking at the influence of socio economic factors on contraceptive use. Variables like husband involvement, husbands' educational level were missing in the data set. Religion was recorded differently in the countries and could not be compared. There were no cases for the number of living children. Given the sensitivity of the subject in these two countries, a chance of self-report bias is present as variables such as education, socio-economic level and contraceptive use are self-reported in DHS.

Misclassification bias might have occurred when participants were classified into different categories. Additional limitation is that the survey questionnaire type may induce behavioral desirability bias. Individuals may be reticent or embarrassed to express their contraceptive use in face-to-face interviews. Validating the participants' answers is challenging.

Furthermore, the statements issued are theoretical, how people respond to the survey statements or questions may be dissimilar than what they would truly do in a specified circumstance. No cause-and-effect relationships could be established. Hence, the cross-sectional nature of the study impedes any causal interpretation of the measured associations.

Finally, the data were not weighted to represent the population from which the samples were drawn. This study was limited to a comparison between Guinea and Mali in terms of the relationships between selected variables and contraceptive use. Some associations have not been analyzed, such as husband's involvement in contraceptive use.

4.f: Recommendations:

The results of this study showed the importance of contraceptive use in family planning in Guinea and Mali. Future research is needed to validate the actual findings and measure the potential relations between socio economic factors and contraceptive use.

The use of contraceptives to spare births are increasing both in Guinea and Mali.

The Demographic Health Survey is one of the rare studies that select questions to contraceptive use in sub-Saharan Africa. Other organizations and researchers should test the reliability of such surveys by using a varied range of criteria.

The proportion of married women using contraceptives is increasing because of some educational programs on radio and television. Other maternal and child health programs are also playing an important role in making contraceptives accessible to the population.

4.g: Conclusion

This study is important because it describes how socioeconomic factors influence behaviors and trends among a national sample of adults from two sub-Saharan African nations.

The results of this study help provide useful insights to public health professionals who are developing programs to spare birth and improve maternal and child health in developing countries. The findings of this study have several implications for family planning. To improve the health of women and their babies, it is essential to spare births. Reproductive justice requires a fair and equitable principles and procedures with regard to reproduction and childbearing, especially in terms of women's access to contraception and abortion or of safe environments in which to raise children:

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