

Contraceptive use among married and unmarried women in sub-Saharan Africa: examining sub-regional patterns and their determinants  
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**Extended abstract**

*Introduction*

The use of modern contraceptives is an important indicator of access to sexual and reproductive health services. Globally, 58% of women of reproductive age, defined as those aged 15-49 years, utilize some form of modern contraception. However, this figure drops markedly in sub-Saharan Africa at only 27.1%<sup>1</sup>, generally lower than in any other region. This statistic overlooks the substantial diversity in levels of contraceptive use within the region. For instance, the Southern Africa subregion boasts a usage rate of 64.9%, surpassing the global average, whereas West (16.8%) and Central (13.1%) Africa fall significantly below the rates observed in other subregions worldwide. The critical question arises: what factors drive these subregional trends in SSA, and could understanding these elements offer insights for enhancing contraceptive use and addressing the unmet need for family planning in the region?

At the London Summit on Family Planning in 2012, many African countries were present and made commitments to support improved access to family planning services. The Family Planning 2020 Initiative sought to achieve the goals of the London Summit by 2020. Yet, for the African countries that are part of the FP2020 Initiative, the levels of use of modern contraceptives (at 28.5%) and unmet need for modern methods of contraception (at 20%) among women in union is no different from the average for the region in 2017. The stark contrasts between countries in East and Southern Africa (ESA) and those in West and Central Africa (WCA) warrant a deeper examination of the factors fueling these divergent trends in SSA, including when these differences became more pronounced and the elements sustaining them. At the aggregate level, the key factors that are strongly correlated with contraceptive use, such as levels of urbanization, female education, and other measure of socio-economic development, generally do not differ as much between ESA and WCA countries. We re-examine these factors as well as other often ignored factors that could explain these patterns such as sexual partnerships, husband's characteristics and polygyny, and norms around pre-marital childbearing. We introduce two proxy indicators related to societal norms on pre-marital childbearing to explore their potential in explaining the observed differences.

*Methods*

Our study used data from the Demographic and Health Surveys (DHS), a nationally representative household surveys collected through a multistage sampling procedure using consistent indicators and standardized methods of data collection. The selection of countries for our analysis was based on the recency of data (collected since 2015) and the availability of key indicators. A total of 19 countries were included in the analysis of marital status and contraceptive use by African sub-regions.

The countries were grouped into two sub-regions, east and southern Africa (ESA) and west and central Africa (WCA), to facilitate analyses of sub-regional differences. Our main independent variable is contraceptive behavior, which has four categories: never used, formerly used, currently using traditional methods, and currently using modern methods. Our key predictor variable is region which is defined as ESA versus WCA. Marital status is defined as never married, currently married/living together, and formerly married (widowed, divorced, or separated). The mean gap between age at first sex and age at first marriage was calculated for each district as a proxy measure of the strength of taboo against out-of-wedlock childbearing. In settings with high taboos, marriage will follow shortly after sexual debut, while

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<sup>1</sup>[https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/files/documents/2020/Jan/un\\_2017\\_worldfamilyplanning\\_highlights.pdf](https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/files/documents/2020/Jan/un_2017_worldfamilyplanning_highlights.pdf)

the gap will be longer in settings that are more accepting of premarital childbearing. Another proxy measure, “after marriage,” was calculated as a percentage of never married and unmarried women who wanted another girl who said they wanted to wait until after marriage to have another child for each district. “After marriage” is a proxy measure to capture injunctive norms around premarital childbearing. In districts where the norm against pre-marital childbearing is strong, unmarried mothers would say they want to wait until after marriage before having another child. We controlled other key individual, household, and contextual (residence) factors.

Our descriptive analysis accounted for the multi-stage cluster sampling, sample weights, and strata. In assessing the variations in contraceptive use across the pooled data from the 19 selected countries, we utilized multilevel multinomial modeling. This approach structured the data hierarchically, with individuals at the primary level nested within the districts (PSUs) at the second level, and countries at the third level. Our models aimed to compare the relative risk associated with different contraceptive use categories (non-use, former use, current use of traditional methods, and current use of modern methods). The analysis was conducted using a two-step Monte Carlo Markov estimation method, starting with a marginal quasi-likelihood method followed by a Monte Carlo Markov Chain analysis with a burn-in of 1000 iterations and a monitoring chain of 10,000 cycles.

#### *Preliminary Results*

Overall, use of modern contraception is higher in ESA compared to WCA. In WCA, mCPR ranged from 13% in Nigeria to under 29.5% in Sierra Leone. In 5 of the 7 countries in the subregion, mCPR was 20% or less. In ESA on the other hand, mCPR ranged from 35% in Uganda to 64% in Zimbabwe. In 3 of the 5 countries in the subregion, mCPR exceeded 55% among all women. Examining contraceptive use by marital status show strong differences between ESA and WCA. In ESA, modern contraceptive use is driven largely by married women while in WCA, use is driven by unmarried women. Except for South Africa where contraceptive use is 10% higher among sexually active unmarried women compared to women in union, in the other countries, married women are more likely to use modern methods than sexually active unmarried women with the gap ranging from 13% in Uganda to more than double in Malawi. In Malawi, for instance, while only 25.6% of sexually active unmarried women are using a modern contraceptive method, 60% of those currently in union are using a method.

In WCA, however, the pattern of use by marital status is in sharp contrast with those of ESA. In this sub-region, sexually active unmarried women drive current use of modern contraception. Across all the 7 countries in the subregion, current use of modern contraception method is lowest among currently married women compared to never married or formally married women. In Guinea, for instance, while 43% of sexually active unmarried women are using a modern contraceptive method, only 11% of their married counterparts reported use. In 4 of the 7 countries in the subregion, sexually active unmarried women are about 2-4 times as likely as currently married women to use modern contraception (see Table 1). We focus the rest of the paper in seeking to explaining this regional pattern in contraceptive use and how they explain the large divide in contraceptive use between ESA and WCA.

To examine these subregional differences in contraceptive use, we developed a few hypotheses which we then tested using available data. Our first hypothesis is that the differences derive from differential availability of accessible and affordable contraceptive methods. This hypothesis argues that increased availability of modern contraceptive methods in public sources will reduce barriers to use, especially among married women. Where access is more limited, especially in public sources, currently married women will be less likely to use as they will face far greater constraints in accessing services from the private sector. Consequently, we hypothesize that public sources will be a more dominant source of contraceptive methods in ESA compared to WSA. We also hypothesize that where public supply of contraceptives is more limited, sexually active unmarried women with multiple sexual partners will be more likely to use contraception and will source their supply from private sources.

**Table 1. Distribution of key variables across countries - DHS 2015-2020**

Country	Regional group	Sexually active in last year	Never married	Currently married	Secondary education	Secondary education or above	Urban	Mean # of living children	Mean DFS	2+ Sex Partners	
		n	mCPR %	%	%	%	%	%	mean	mean	%
Burundi		10012	23.3	3.7	92.1	11.4	12.5	11	2.39	3.86	0.5
Ethiopia		9894	36.2	1.9	94.4	6.9	11.5	17.4	2.51	4.45	0.4
Malawi		18316	55.8	8.1	82.7	20.8	23.7	17.7	2.48	3.66	1.7
Rwanda	Eastern and Southern Africa	8481	55.8	10.1	83.5	18.9	23.7	19	1.95	3.49	2.2
South Africa		6489	57.4	50.8	44.4	76.5	89.2	67.9	1.55	2.60	5.9
Tanzania		10216	33.2	12.7	76	17.9	19.4	35.2	2.46	4.74	-
Uganda		13717	35.3	11	78.8	23.5	31.9	25.6	2.75	4.79	3.1
Zambia		10237	43.3	17.3	72.7	39.4	45	43.4	2.50	4.57	2
Zimbabwe		7186	64.1	6.3	84.1	62.4	69.9	36.4	2.00	3.95	1.5
<b>Unweighted Average</b>		<b>94548</b>	<b>44.93</b>	<b>13.54</b>	<b>78.74</b>	<b>30.86</b>	<b>36.31</b>	<b>30.40</b>	<b>2.29</b>	<b>4.01</b>	<b>2.16</b>
Angola		11148	15.4	25.4	68.1	36.7	41.8	68.6	2.51	4.92	2.1
Benin		12394	14.5	13.2	82.9	19.8	21.9	41.7	2.54	5.15	2
Cameroon		10740	20.9	20.5	72.3	41.3	49.3	53.7	2.30	5.40	5.4
Gambia		7390	19.5	3.4	94.2	30.5	36.3	68.7	2.25	5.80	0.4
Guinea	Western and Central Africa	7110	14.9	11.2	86.4	11.7	15.9	35.7	2.28	5.44	2.2
Liberia		6732	29.4	33.4	58.8	40.3	46.3	61.3	2.28	4.61	8.4
Mali		8340	17.8	5.7	93.1	16.2	18.1	24.3	2.91	5.99	1.1
Nigeria		31335	13.4	9.2	88.1	33.6	44.8	42.3	2.58	6.09	1.7
Senegal		5625	27	1.7	96.6	15.8	19.2	41.5	2.16	5.45	0.1
Sierra Leone		11945	29.5	25.2	70.8	34.2	39	44.6	2.16	4.73	4.8
<b>Unweighted Average</b>		<b>112759</b>	<b>20.23</b>	<b>14.89</b>	<b>81.13</b>	<b>28.01</b>	<b>33.26</b>	<b>48.24</b>	<b>2.40</b>	<b>5.36</b>	<b>2.82</b>

**Table 2. Multilevel multinomial modeling – Reference category: Never used contraceptives.**

Currently using-modern		Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7		Model 8		Model 9	
		B	P	Coef.	P	Coef.	P	Coef.	P	Coef.	P	Coef.	P	Coef.	P	Coef.	P	Coef.	P
	Intercept	0.64	0	1.13	0.407	1.15	0.129	0.44	0	0.35	0	0.32	0	0.32	0	0.70	0	0.7663	0
Marital status	currently in union			1.17	0	1.17	0	1.25	0	1.26	0	1.26	0	1.27	0	0.98	0.197	0.9933	0.373
	formerly in union			1.31	0	1.30	0	1.41	0	1.41	0	1.41	0	1.42	0	1.32	0	1.3289	0
Region	Western Central					0.36	0	0.21	0	0.18	0	0.19	0	0.20	0	0.17	0	0.16	0
Age	Age							1.01	0	1.01	0	1.01	0	1.01	0	0.96	0	0.9559	0
Education	primary							1.85	0	1.85	0	1.85	0	1.84	0	2.05	0	2.0279	0
	secondary							2.44	0	2.42	0	2.43	0	2.41	0	3.12	0	3.0724	0
	higher							2.98	0	2.97	0	2.96	0	2.94	0	4.79	0	4.7249	0
Wealth	poorer							1.23	0	1.23	0	1.23	0	1.22	0	1.26	0	1.258	0
	middle							1.49	0	1.49	0	1.48	0	1.48	0	1.56	0	1.5462	0
	richer							1.69	0	1.69	0	1.68	0	1.67	0	1.85	0	1.8256	0
	richest							1.66	0	1.65	0	1.64	0	1.64	0	1.95	0	1.9125	0
Urban	Urban							1.43	0	1.42	0	1.41	0	1.40	0	1.60	0	1.5455	0
	After marriage_psu									6.68	0			5.30	0			5.2012	0
	Mean gap between age at 1st sext & 1st Marriage_psu											1.05	0	1.05	0			1.0741	0
	No. of children															1.42	0	1.4267	0

\*Results for currently using-traditional and formerly using were omitted from table.