ORIGINAL RESEARCH ARTICLE

Health Implications of Male Education and Media Exposure on Contraceptive Behaviour in Sub-Saharan Africa

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Abstract

Background Male participation in contraceptive decision-making is increasingly recognised as a key determinant of reproductive health outcomes in sub-Saharan Africa (SSA). Yet, the pathways through which men's education and media exposure shape male-reported contraceptive behaviour remain under-examined. This study strengthens the public health perspective by highlighting how male engagement contributes to improved reproductive health and supports progress toward Sustainable Development Goal (SDG) 3 on ensuring healthy lives.

Methods A cross-sectional analysis was conducted using harmonised IPUMS-DHS datasets for 22,265 men aged 15–59 years in Nigeria, Uganda, and South Africa. Survey weights were applied in all descriptive and multivariable analyses. Logistic regression models assessed the associations between education, exposure to newspapers/radio/television, and male-reported modern contraceptive use.

Results Overall, 25.7% of men reported current use of modern contraception. Higher educational attainment was strongly associated with use (aOR for higher education = 4.47; 95% CI: 3.68–5.43). Exposure to newspapers (aOR = 1.13), radio (aOR = 1.27), and television (aOR = 1.24) independently increased the likelihood of use. Substantial cross-country variations were observed, with South African men being over six times more likely to report contraceptive use than Nigerian men after adjusting for all covariates.

Conclusion Despite the positive influence of male education and media exposure, many well-educated men remain non-users, indicating a persistent behavioural gap with significant implications for public health systems. Strengthening male-focused reproductive health interventions and expanding culturally responsive media messaging are essential to reducing unintended pregnancies, lowering maternal morbidity, and advancing SDG 3 targets in SSA.

Keywords Contraception, Education, Male involvement, Media exposure, Public health, Sub-Saharan Africa

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1 Introduction

Male involvement in reproductive health, particularly in family planning (FP), is increasingly recognized as a critical determinant of contraceptive uptake and broader sexual and reproductive health outcomes in sub-Saharan Africa (SSA).[1-3] Historically, FP initiatives in SSA have focused primarily on women, overlooking the substantial influence male partners exert on reproductive decision-making within households.[4,5] Emerging scholarship and programmatic evidence indicate that men's knowledge, attitudes, and behaviours, shaped by education and media exposure, play an important role in either supporting or hindering contraceptive use.[6,7]

Education is widely regarded as a transformative factor that enhances health literacy and improves reproductive decision-making. Numerous studies have shown that higher educational attainment among men is associated with greater approval and use of modern contraceptives.[8-10] For example, data from the 2018 Nigeria Demographic and Health Survey (DHS) demonstrate that men with secondary or higher education are significantly more likely to be aware of contraceptive methods. However, only about one-third reported using or supporting a modern FP method, despite more than 60 percent having completed secondary education.[11] This discrepancy raises concerns about the assumption that education alone is sufficient to change FP-related behaviour. Even educated men may hold deep-rooted cultural or religious beliefs that reinforce patriarchal reproductive norms, thereby limiting their engagement in FP.[12-14]

Mass media also plays a central role in disseminating reproductive health information. Exposure to FP messages through radio, television, and newspapers has been associated with increased knowledge and approval of modern contraceptive methods among men.[5,15] In Ghana, for instance, men who frequently encountered FP messages in the media were more likely to discuss and support contraceptive use within their relationships.[9] However, the effectiveness of media exposure in shaping attitudes and behaviour remains inconsistent across countries and population subgroups. Some studies caution that mere exposure does not necessarily translate into informed or supportive behaviours, particularly when FP messaging is not culturally contextualized or gender transformative.[16,17]

Despite decades of investment in FP programming, SSA continues to report the lowest modern contraceptive prevalence rate globally, 29 percent among women aged 15 – 49 years as of 2023.[18-20] While these figures predominantly reflect female use, the attitudes and behaviours of men, often gatekeepers of reproductive decision-making, remain critical yet understudied determinants. Similar patterns have been observed in Uganda and South Africa, where improvements in male educational attainment have not translated into meaningful engagement in FP programmes. Cultural expectations surrounding masculinity continue to reinforce opposition to contraceptive use among some groups.[21-23]Understanding how their education and media exposure affect contraceptive use is essential for informing health system interventions, strengthening reproductive autonomy, and enhancing family wellbeing. This study examines the paradox of being "well-educated yet less engaged" by assessing how male education and media exposure influence the use of modern contraceptives in three diverse SSA countries (Nigeria, Uganda, and South Africa) using harmonized data from the Integrated Public Use Microdata Series–Demographic and Health Surveys (IPUMS-DHS) database, to articulate the implications for public health systems, fertility transition and family wellbeing in SSA.

2 Methods

Study Design

This study employed a cross-sectional design using nationally representative, population-based data from the IPUMS-DHS. Harmonized men's datasets from the most recent DHS surveys in Nigeria (2018), South Africa (2016), and Uganda (2016) were analyzed. These countries were selected to capture diverse contexts in terms of fertility patterns, health system capacity, media access, and gender norms in sub-Saharan Africa. To strengthen methodological transparency, the reporting of this manuscript adheres to the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guideline.[24]

Study Population

The study population consisted of men aged 15–59 years who completed the men's questionnaire and had complete information on contraceptive use, educational attainment, and media exposure. The final analytical sample comprised 22,265 weighted cases (Nigeria: 13,311; South Africa: 3,618; Uganda: 5,336). Respondents with missing values for key study variables were excluded.

Sampling and Data Source

Data were derived from the DHS program's nationally representative two-stage stratified cluster sampling strategy. In the first stage, enumeration areas were selected using probability proportional to size. In the second stage, households were randomly selected within each area. All analyses were conducted using the harmonized IPUMS-DHS men's files, which provide standardized recoded variables to facilitate cross-country comparisons. DHS male sampling weights (mv005), adjusted by dividing

by 1,000,000, were applied in all analyses (descriptive, bivariate, and multivariable) to correct for unequal probability of selection, non-response, and the complex survey design. This ensures accurate variance estimation and national representativeness.

Outcome Variable

The primary outcome was male-reported current use of modern contraceptive methods. This variable was derived from the DHS question: "The last time you had sex, did you or your partner use any method to avoid or prevent a pregnancy?" Responses were recoded into a binary variable:

1 = modern method user (e.g., condoms, injectables, pills, IUDs, implants, vasectomy)

0 = none/traditional method user (no method, abstinence, withdrawal, or folkloric methods), according to DHS standard classifications.

This measure reflects contraceptive use reported by men and may capture decisions made jointly or predominantly by female partners. While it serves as an indicator of male involvement in FP, it does not capture all dimensions of involvement nor specifically male-initiated method use.

The main independent variables were male educational attainment and media exposure. Educational level was categorized as no education, primary, secondary, or higher education. Media exposure was assessed using three binary indicators reflecting whether the respondent had any exposure to newspapers, radio, or television. Several covariates were included based on prior evidence and theoretical relevance. These comprised age group [15–29, 30–39, 40–49, and 50–59 years), marital status (never married, currently married or in union, and formerly married-divorced, separated, or widowed), employment status (currently working versus not working), household wealth quintile (poorest, poorer, middle, richer, richest), place of residence (urban or rural), and country of residence (Nigeria, South Africa, or Uganda).

Statistical Analysis

Data analysis was performed using SPSS Version 30. Descriptive statistics were used to summarize sociodemographic characteristics across the three countries. Bivariate associations between independent variables and modern contraceptive use were examined using Chi-square tests.

Multivariable binary logistic regression was conducted to estimate adjusted odds ratios (aORs) with 95% confidence intervals, assessing the independent influence of male education and media exposure on modern contraceptive use while controlling for covariates. Multicollinearity was evaluated using Variance Inflation Factor values, all of which were below 3, indicating no significant multicollinearity. Model adequacy was assessed using the Hosmer–Lemeshow goodness-of-fit test, Nagelkerke R^2, and overall classification accuracy.

Sampling weights were applied in all analyses, and the complex survey design was accounted for. Statistical significance was set at $p < 0.05$.

3 Results

Table 1 summarizes the background characteristics of the 22,265 male respondents from Nigeria, South Africa, and Uganda. Across the three countries, the majority were aged 15 – 29 years, and notable differences were observed in educational attainment: South Africa had the highest proportion of men with secondary education (71.8%), while Nigeria had the largest share with no formal education (22.6%), and Uganda had the highest proportion with only primary education (55.3%). Media exposure was substantially higher in South Africa, where most men reported regular access to newspapers, radio, and television, compared with lower levels in Nigeria and Uganda. Marital and employment patterns also varied: most men in Nigeria and Uganda were currently married, whereas the majority in South Africa had never married; employment was high in Nigeria and Uganda but lower in South Africa. Wealth and residence distributions reflected country-specific contexts, with South African men concentrated in middle wealth quintiles and urban areas, while Ugandan men were predominantly rural, and Nigeria and Uganda had larger representation in both the poorest and richest quintiles.

Figure 1 shows modern contraceptive use among men in Nigeria, South Africa, and Uganda. Overall, only 25.7% of men reported current use of a modern method, while 74.3% relied on no method or traditional methods. Substantial cross-country differences were observed: South Africa had the highest prevalence (52.9%), Uganda was intermediate (35.9%), and Nigeria had the lowest (14.3%). These patterns highlight important disparities in male contraceptive behaviour in sub-Saharan Africa, likely influenced by differences in education, cultural norms, media exposure, and access to services.

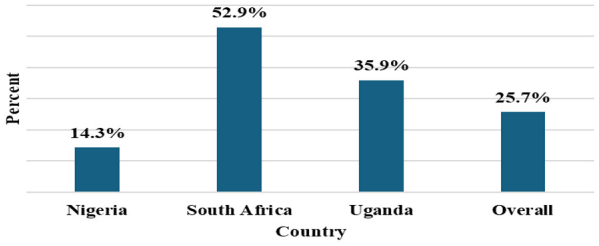

Figure 1 Modern Contraceptive Use Among Male Respondents by Country

Table 1 Descriptive Characteristics of Male Respondents by Country (N = 22,265)

Variable	Nigeria n (%)	South Africa n (%)	Uganda n (%)	Total n (%)
Age Group				
15–29 years	5,487 (41.2%)	1,741 (48.1%)	2,979 (55.8%)	10,207 (45.8%)
30–39 years	3,624 (27.2%)	845 (23.4%)	1,226 (23.0%)	5,695 (25.6%)
40–49 years	2,757 (20.7%)	616 (17.0%)	832 (15.6%)	4,205 (18.9%)
50–59 years	1,443 (10.8%)	416 (11.5%)	299 (5.6%)	2,158 (9.7%)
Educational Level				
No education	3,005 (22.6%)	108 (3.0%)	223 (4.2%)	3,336 (15.0%)
Primary	1,911 (14.4%)	515 (14.2%)	2,950 (55.3%)	5,376 (24.1%)
Secondary	6,107 (45.9%)	2,597 (71.8%)	1,497 (28.0%)	10,201 (45.8%)
Higher	2,288 (17.2%)	398 (11.0%)	667 (12.5%)	3,353 (15.1%)
Reads Newspaper				
No	8,764 (65.8%)	1,034 (28.6%)	3,451 (64.7%)	13,249 (59.5%)
Yes	4,547 (34.2%)	2,584 (71.4%)	1,885 (35.3%)	9,016 (40.5%)
Listens to Radio				
No	4,332 (32.5%)	595 (16.4%)	690 (12.9%)	5,617 (25.2%)
Yes	8,979 (67.5%)	3,023 (83.6%)	4,646 (87.1%)	16,648 (74.8%)
Watches Television				
No	5,349 (40.2%)	452 (12.5%)	2,597 (48.7%)	8,398 (37.7%)
Yes	7,962 (59.8%)	3,166 (87.5%)	2,739 (51.3%)	13,867 (62.3%)
Marital Status				
Never married	4,963 (37.3%)	2,143 (59.2%)	2,082 (39.0%)	9,188 (41.3%)
Currently in union	8,180 (61.5%)	1,276 (35.3%)	2,954 (55.4%)	12,410 (55.7%)
Formerly in union	168 (1.3%)	200 (5.5%)	299 (5.6%)	667 (3.0%)
Currently Working				
No	1,711 (12.9%)	1,927 (53.3%)	412 (7.7%)	4,050 (18.2%)
Yes	11,600 (87.1%)	1,691 (46.7%)	4,924 (92.3%)	18,215 (81.8%)
Household Wealth Index				
Poorest	2,276 (17.1%)	701 (19.4%)	899 (16.8%)	3,876 (17.4%)
Poorer	2,387 (17.9%)	746 (20.6%)	947 (17.7%)	4,080 (18.3%)
Middle	2,658 (20.0%)	779 (21.5%)	1,048 (19.6%)	4,485 (20.1%)
Richer	2,892 (21.7%)	745 (20.6%)	1,176 (22.0%)	4,813 (21.6%)
Richest	3,097 (23.3%)	647 (17.9%)	1,266 (23.7%)	5,010 (22.5%)
Place of Residence				
Urban	6,182 (46.4%)	2,494 (68.9%)	1,330 (24.9%)	10,006 (44.9%)
Rural	7,129 (53.6%)	1,124 (31.1%)	4,006 (75.1%)	12,259 (55.1%)

Table 2 presents the bivariate associations between male characteristics and modern contraceptive use. Education showed a strong positive relationship, with higher levels associated with greater use, indicating a clear dose–response pattern. Media exposure was similarly significant, with men reporting access to newspapers, radio, or television more likely to use modern methods. Age and marital status were also associated with use, with younger and never-married men reporting higher prevalence. Wealth demonstrated a gradient effect, and urban men were more likely to use modern methods than rural men. Cross-country differences were substantial, with South Africa exhibiting the highest prevalence, followed by Uganda and Nigeria. These results underscore the influence of education, media exposure, and socio-demographic factors on male contraceptive behaviour and inform subsequent multivariate analysis.

Table 2 Bivariate Association Between Male Education, Media Exposure, and Modern Contraceptive Use (N = 22,265)

Characteristic	Total (n)	None/Traditional Method n (%)	Modern Method n (%)	Chi-square (χ^2)	p-value
Educational Level					
No education	3,335	3,175 (95.2%)	160 (4.8%)	1059.002	<0.001
Primary	5,376	4,124 (76.7%)	1,252 (23.3%)		
Secondary	10,200	7,027 (68.9%)	3,173 (31.1%)		
Higher	3,354	2,210 (65.9%)	1,144 (34.1%)		
Reads Newspaper					
No	13,248	10,779 (81.4%)	2,469 (18.6%)	860.815	<0.001
Yes	9,016	5,757 (63.9%)	3,259 (36.1%)		
Listens to Radio					
No	5,617	4,793 (85.3%)	824 (14.7%)	480.716	<0.001
Yes	16,647	11,743 (70.5%)	4,904 (29.5%)		
Watches Television					
No	8,398	7,028 (83.7%)	1,370 (16.3%)	625.265	<0.001
Yes	13,867	9,509 (68.6%)	4,358 (31.4%)		
Age Group					
15–29 years	10,206	7,320 (71.7%)	2,886 (28.3%)	166.939	<0.001
30–39 years	5,695	4,142 (72.7%)	1,553 (27.3%)		
40–49 years	4,204	3,269 (77.8%)	935 (22.2%)		
50–59 years	2,159	1,805 (83.6%)	354 (16.4%)		
Marital Status					
Never married	9,188	6,293 (68.5%)	2,895 (31.5%)	273.703	<0.001
Ever married	13,077	10,244 (78.3%)	2,833 (21.7%)		
Currently Working					
No	4,050	2,739 (67.6%)	1,311 (32.4%)	114.319	<0.001
Yes	18,214	13,797 (75.7%)	4,417 (24.3%)		
Wealth Index					
Poorest	3,877	3,244 (83.7%)	633 (16.3%)	379.068	<0.001
Poorer	4,080	3,175 (77.8%)	905 (22.2%)		
Middle	4,484	3,367 (75.1%)	1,117 (24.9%)		
Richer	4,813	3,385 (70.3%)	1,428 (29.7%)		
Richest	5,011	3,366 (67.2%)	1,645 (32.8%)		
Place of Residence					
Urban	10,007	6,960 (69.6%)	3,047 (30.4%)	211.795	<0.001
Rural	12,259	9,577 (78.1%)	2,682 (21.9%)		
Country					
Nigeria	13,311	11,411 (85.7%)	1,900 (14.3%)	2601.897	<0.001
South Africa	3,618	1,703 (47.1%)	1,915 (52.9%)		
Uganda	5,336	3,422 (64.1%)	1,914 (35.9%)		

Table 3 presents the adjusted associations between male characteristics and modern contraceptive use. Education remained the strongest predictor, with a clear dose–response relationship: men with primary, secondary, and higher education were progressively more likely to use modern methods compared with those with no formal schooling (aORs = 2.29, 3.54, and 4.47, respectively; $p < .001$). Media exposure was also positively associated with use, with men reporting access to newspapers, radio, or television more likely to use modern contraception (aORs = 1.13–1.27; $p \leq .003$).

Age and marital status influenced use: men aged 50–59 and those ever married had lower odds of using modern methods, whereas employment and wealth were positively associated. Urban–rural differences were not significant after adjustment, suggesting mediation by education and media exposure. Substantial country-level differences persisted, with men in South Africa and Uganda having significantly higher odds of use than men in Nigeria (aOR = 6.38 and 3.56, respectively; $p < 0.001$). The model demonstrated good fit (Nagelkerke $R^2 = 0.235$; Hosmer–Lemeshow $p = 0.141$).

Table 3 Logistic Regression of Modern Contraceptive Use on Male Education and Media Exposure (N = 22,265)

Predictor	B	S.E.	Wald	aOR	95% CI for aOR	p-value
Educational Level						
No education (Ref)				1.000		
Primary	0.829	0.093	78.894	2.290	1.908 – 2.750	<0.001
Secondary	1.265	0.091	192.687	3.544	2.964 – 4.238	<0.001
Higher	1.497	0.099	226.904	4.467	3.677 – 5.427	<0.001
Reads Newspaper						
No (Ref)				1.000		
Yes	0.121	0.041	8.693	1.128	1.041 – 1.223	0.003
Listens to Radio						
No (Ref)				1.000		
Yes	0.240	0.050	22.744	1.271	1.152 – 1.402	<0.001
Watches Television						
No (Ref)				1.000		
Yes	0.211	0.046	20.647	1.235	1.127 – 1.352	<0.001
Age Group						
15–29 years (Ref)				1.000		
30–39	0.198	0.051	15.180	1.219	1.103 – 1.346	<0.001
40–49	0.034	0.060	0.319	1.034	0.920 – 1.162	0.572
50–59	-0.330	0.078	17.864	0.719	0.617 – 0.838	<0.001
Marital Status						
Never married (Ref)				1.000		
Ever married	-0.441	0.048	83.541	0.643	0.585 – 0.707	<0.001
Currently Working						
Not working (Ref)				1.000		
Working	0.414	0.050	67.692	1.513	1.371 – 1.670	<0.001
Wealth Index						
Poorest (Ref)				1.000		
Poorer	0.194	0.064	9.081	1.214	1.070 – 1.378	0.003
Middle	0.237	0.064	13.839	1.268	1.119 – 1.436	<0.001
Richer	0.410	0.065	39.196	1.506	1.325 – 1.713	<0.001
Richest	0.431	0.071	36.742	1.539	1.338 – 1.769	<0.001

Place of Residence						
Urban				1.000		
Rural	0.013	0.041	0.097	1.013	0.934 – 1.098	0.756
Country						
Nigeria (Ref)				1.000		
South Africa	1.853	0.052	1283.353	6.377	5.763 – 7.058	<0.001
Uganda	1.270	0.046	760.210	3.560	3.253 – 3.897	<0.001

Model Fit Statistics

- -2 Log Likelihood: 21,510.649
- Nagelkerke R^2: 0.235
- Hosmer–Lemeshow Test: $\chi^2 = 44.182$, df = 8, p = 0.141

Note: adjusted odds ratios (aOR) are controlled for all covariates; aOR: adjusted Odds Ratio, S.E.: Standard Error, B: Coefficient

4 Discussion

This study assessed how male education and media exposure influence modern contraceptive use among men in Nigeria, Uganda, and South Africa using nationally representative DHS datasets. The findings demonstrate that male education and media exposure are consistent and significant predictors of modern contraceptive use, even after adjusting for key demographic and socioeconomic factors. These findings reinforce the critical role of information access and educational empowerment in influencing reproductive behaviour, while also highlighting persistent behavioural gaps that carry important implications for public health in SSA. The strong dose–response relationship observed between educational attainment and contraceptive use aligns with previous studies in Ethiopia, Ghana, and Uganda,[9,25,26] where higher male educational attainment was associated with contraceptive use.

However, the present study extends this evidence by showing that even among highly educated men, a substantial proportion remain non-users, suggesting that education alone is insufficient to overcome entrenched patriarchal norms, misconceptions, and gendered expectations around fertility and reproductive roles.[27] This finding challenges the commonly held assumption that increased schooling will automatically translate into improved reproductive behaviour among men. Instead, it reveals a "socioeconomic–adoption gap," where knowledge exists but is not consistently converted into practice. Such gaps pose structural risks for reproductive health programming and for achieving SDG 3 targets, especially in contexts where men wield significant decision-making authority over contraceptive choices. In Nigeria, for instance, previous studies showed that a substantial proportion of men remained non-users of contraception despite high awareness.[28,29] In Oyo State, Nigeria, male awareness did not translate into uptake, particularly when cultural and religious beliefs discouraged male responsibility in family planning.[30] In fact, in Kenya and South Sudan, previous studies cautioned against relying solely on formal education as a driver of behavioural change.[23,31]

Media exposure also emerged as a significant and independent determinant of contraceptive use across the three countries. Exposure to family planning messages via radio, television, and newspapers significantly increased men's reported likelihood of using modern contraceptives, with the strongest effect observed for radio. This likely reflects radio's affordability, broad rural coverage, and oral delivery format, which aligns with communication traditions in many SSA countries. In contrast, television and newspapers are more accessible to wealthier, urban populations, which may explain their relatively smaller effects, corroborating earlier findings from Ghana,[9] Ethiopia,[5] and Nigeria.[15,32] These findings support the continued importance of digital and traditional media interventions for disseminating reproductive health messages, particularly in areas with limited healthcare access.[16] The magnitude of media influence varies by country. For instance, South African men, who had the highest media exposure, also reported the highest contraceptive use, consistent with Van den Berg et al.[23] who attribute this to progressive reproductive health communication strategies and media-driven male engagement programmes. Conversely, Nigerian men had the lowest media exposure and usage levels, supporting Okonofua et al.'s[7] assertion that insufficient and culturally inappropriate messaging hampers male participation in family planning. The variability in effect sizes across countries suggests that the influence of media depends not only on access but also on message content, framing, and alignment with community values.

Age and marital status also significantly predict contraceptive use. Younger men (15–29 years) and those who were unmarried were more likely to use modern methods, particularly condoms, consistent with findings from Kenya and Uganda.[22,26]These results align with studies by Rana et al.[33] and Agbo et al.[34] highlighting

high contraceptive uptake among young, unmarried men primarily for dual protection against sexually transmitted infections and pregnancy. Wealth and employment status were positively associated with contraceptive use across all three countries, consistent with evidence from South Africa and Ghana.[6,35] Interestingly, the association between employment and contraceptive use reversed after adjustment. At the bivariate level, non-working men reported higher contraceptive use, possibly reflecting greater reliance on condoms among students or unemployed youth. However, after controlling for education and wealth, employed men were more likely to use modern contraception, suggesting that the crude association was confounded by socioeconomic factors rather than representing a true negative relationship. Economic stability likely enhances access to services, agency, and reduced reliance on traditional beliefs discouraging family planning. These findings are echoed in Uganda, where Kizza and Wasswa[36] emphasized the role of economic empowerment in male reproductive decision-making.

Residence (urban vs. rural) was not a significant predictor in fully adjusted models, suggesting improvements in access to contraceptive services in rural areas across SSA. This contrasts with earlier studies[1,27] reporting higher urban uptake. The present findings may indicate the growing success of community-based family planning outreach programmes, particularly in Uganda and parts of South Africa, aimed at bridging service delivery gaps.[3,20] Cross-country disparities were pronounced: South African men were over six times more likely to use modern contraceptives than Nigerian men. South Africa's progressive policies, male-friendly services, and robust healthcare infrastructure likely support these outcomes,[37,38] whereas Nigeria's low uptake reflects persistent structural and cultural barriers, including provider bias, male dominance in decision-making, myths about contraception, and weak health system governance.[7,11] Uganda displayed intermediate results, with high male awareness and approval of modern contraceptives, but adoption remained constrained by cultural resistance and limited male-focused outreach.[39,40] Overall, while education and media exposure are key facilitators of contraceptive use, their effectiveness is moderated by structural, cultural, and policy contexts.

This study has several strengths. First, it utilised large, nationally representative samples of men from three diverse countries, enhancing the generalizability of findings across low-, middle-, and upper-middle-income sub-Saharan African contexts. Second, the use of harmonized IPUMS-DHS data enabled robust cross-country comparative analysis, standardizing key variables and identifying context-specific patterns. Third, including both education and multiple forms of media exposure provides a comprehensive understanding of how information access influences male contraceptive behaviour. Finally, multivariable logistic regression was applied to adjust for potential confounders, increasing the likelihood that observed associations reflect true relationships.

Despite these strengths, some limitations should be noted. First, the outcome variable, male-reported contraceptive use, captures whether the respondent or his partner used any modern method during the last sexual encounter. While informative at the couple level, it may not fully represent male-driven use or decision-making. Second, the binary categorization of media exposure (yes/no) limits assessment of frequency, duration, and content of exposure, which are critical for understanding behavioural influence. Third, the cross-sectional design precludes causal inference, as the temporal sequence between education, media exposure, and contraceptive use cannot be established. Fourth, self-reported measures may be affected by recall or social desirability bias, particularly where family planning discussions remain culturally sensitive. Fifth, psychosocial, religious, and health system variables, such as partner communication, provider attitudes, or service quality, were unavailable, potentially leaving residual confounding. Finally, while findings are generalizable within the three countries studied, they may not extend to all sub-Saharan African contexts without adaptation to differing cultural, political, or religious settings.

Implications for Public Health Policy and Male Involvement Programmes

The study's findings have important implications for public health policy and male involvement programming. First, education alone is not enough. Strengthening male involvement requires interventions that go beyond formal schooling to address social norms, gender dynamics, and entrenched misconceptions. Second, media-based behaviour-change communication must be expanded and localised. Radio, in particular, should be leveraged to reach rural and low-literacy populations. Culturally sensitive, gender-transformative messaging is essential. National reproductive health policies and donor programmes should adopt gender-transformative approaches that confront patriarchal beliefs, promote equitable decision-making, and encourage respectful partner dialogue. Third, male-inclusive reproductive health services are urgently needed. Health systems should provide counselling environments where men feel welcome and respected, reducing stigma associated with seeking FP information. Healthcare providers should be trained to offer male-inclusive counseling to reduce stigma for men seeking family planning information or services. Fourth, country-specific strategies are

necessary. Nigeria, with the lowest levels of use, should prioritise community-led FP dialogues, engagement with religious/traditional leaders, and integration of FP messages into male-dominated occupational settings (markets, transport unions, military or police institutions, etc.). Given the influence of wealth and employment on contraceptive use, governments should remove financial and logistical barriers, including free or subsidized contraceptive services, and workplace-based outreach. Fifth, advancing SDG 3.7 requires deliberate male engagement strategies. Without bringing men into the centre of FP decision-making, reductions in unintended pregnancy, maternal mortality, and health system burden will remain limited.

5 Conclusion

This study provides multi-country evidence that male educational attainment and media exposure significantly influence modern contraceptive use among men in Nigeria, Uganda, and South Africa. Despite this positive association, the persistence of low uptake among many well-educated men reveals a substantial behavioural gap with serious implications for public health, reproductive wellbeing, and health system strain. These findings highlight the critical need for male-centred reproductive health strategies that move beyond information provision to address gender norms, power dynamics, and structural barriers that inhibit male participation.

Strengthened media messaging, particularly through radio and gender-transformative community engagement can significantly improve male involvement in contraceptive decision-making. Health systems should therefore prioritise male-friendly counselling, integrate FP information into male-dominated spaces, and invest in culturally responsive communication strategies. Such measures are essential to achieving Sustainable Development Goal (SDG) 3.7 on universal access to reproductive healthcare, reducing unintended pregnancies, and improving family wellbeing across SSA.

Declarations

Acknowledgments
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Artificial Intelligence Disclosure
The author affirms that Grammarly AI was employed solely as a language-editing tool to enhance grammatical accuracy, clarity, and readability in parts of this manuscript. No generative artificial intelligence was used for data analysis, interpretation, or the creation of scientific content. Full responsibility for the scholarly integrity of the work remains with the author.

Authors' Contributions
The author solely conceived, designed, and conducted the study, performed the data analysis and interpretation, and drafted and finalized the manuscript.

Availability of Data and Materials
The datasets utilised in this research are publicly accessible through the DHS Program. Researchers interested in accessing the data can create an account and submit a request via the DHS Program website (https://dhsprogram.com/). Furthermore, the primary data employed in this study can be obtained from the corresponding author upon reasonable request.

Conflict of Interest
The author declares no conflict of interest

Consent for Publication
Not applicable.

Ethical Considerations
This research utilised secondary data from publicly available sources, specifically de-identified datasets from the DHS Program accessed via the IPUMS-DHS portal. The original data collection received ethical approval from ICF International (ICF IRB FWA00000845) and the respective national ethics committees in each participating country. Informed written consent was obtained from all survey respondents, and data collection adhered to the ethical principles outlined in the Declaration of Helsinki. Since the data is publicly available at https://www.idhsdata.org/idhs/ upon registration, no further ethical approval was necessary for this secondary analysis.

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