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Access and Utilization of Modern Contraceptives and Parity in Rural-based County in Kenya

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Abstract: An increasing body of empirical research highlights that personal reproductive decisions particularly those shaped by parity play a central role in contraceptive utilization among women in sub-Saharan Africa (SSA). While structural and sociocultural barriers undoubtedly influence access, focusing specifically on individual agency reveals that parity functions as a pivotal determinant of contraceptive intent, method choice, and continuation. Women's personal fertility goals, which often evolve in response to their lived reproductive experiences, significantly shape their decisions to adopt, continue, or discontinue modern contraception.

Keywords: Access, Contraceptive, Modern contraceptive, Utilization.

INTRODUCTION

Contraceptive utilization in sub-Saharan Africa (SSA) remains a critical determinant of reproductive health outcomes, with significant variations observed across parity levels, marital status, and sociocultural contexts. Empirical evidence consistently underscores that parity, a woman's number of live births plays a central role in shaping contraceptive behavior, intersecting with structural, cultural, and policy-related factors that either facilitate or impede access to modern contraceptive methods. Long-acting reversible contraceptives (LARCs), such as implants and intrauterine devices (IUDs), are internationally recognized as first-line, highly effective options for pregnancy prevention due to their superior efficacy compared to short-acting methods (Gebeyehu et al., 2018). These methods are particularly suitable for women seeking to either space or limit births, aligning with reproductive intentions that often evolve with increasing parity (Mariam et al., 2018).

At the continental level, modern contraceptive prevalence among women of reproductive age (15–49 years) stands at approximately 28.5% for married women, with even lower rates among all women when including the unmarried (Cahill et al., 2018). According to data from United Nations (2022), Africa records the lowest regional contraceptive prevalence globally at 22.4% for modern methods far below the world average of 56.1% and markedly lower than Latin America (67.0%), Asia (60.2%), and North America (72.9%). This low baseline, however, obscures substantial variation within the continent itself. Northern Africa (54.0%) and Southern Africa (58.1%) exhibit relatively higher rates of modern contraceptive use, driven in part by better health infrastructure, higher female education, and more progressive policy environments (Buhling et al., 2014).

In stark contrast, Western Africa (8.7%) and Central Africa (6.6%) remain the global epicenters of low contraceptive use, where high fertility, limited health services, and entrenched cultural norms converge to suppress uptake (United Nations, 2022). Eastern Africa, home to several countries with ambitious family planning agendas such as Kenya, Ethiopia, and Rwanda, shows intermediate but rapidly improving rates averaging 22.8% to 28.4% depending on the data source (United Nations, 2022). Kenya, for instance, has seen its modern contraceptive prevalence rate (mCPR) among married women climb steadily from 32% in 2003 to 57% in 2022 (Kenya National Bureau of Statistics [KNBS], 2022). This progress reflects sustained investments in community health programs, integration of family planning into maternal and child health services, and targeted campaigns to expand method choice.

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The consequences of low contraceptive utilization are profound and well-documented. Africa bears the highest maternal mortality ratio globally, with approximately 533 maternal deaths per 100,000 live births largely attributable to high fertility, early childbearing, and closely spaced pregnancies (World Health Organization [WHO, 2015). Contraception directly mitigates these risks by enabling women to delay first births, space subsequent pregnancies at healthy intervals (ideally 24–59 months), and limit family size according to their reproductive intentions (Kassa et al., 2018). Studies confirm that optimal birth spacing, facilitated by modern contraceptives, significantly improves perinatal outcomes and reduces neonatal and infant mortality (Sedekia et al., 2017; de Vargas Nunes et al., 2019).

In Africa, this unmet need is among the highest in the world. Kenya's 2022 KDHS reports that while 76% of married women have a demand for family planning, 14% remain unsatisfied; the figure rises to 19% among unmarried sexually active women (KNBS, 2022). In counties like Marsabit (38% unmet need) and West Pokot (30%), the disconnect between intention and access is acute. This gap is not due to lack of awareness, studies in Nigeria, for example, show that over 90% of women know of modern methods but rather to a constellation of preventable barriers (Asekun-Olarinmoye, 2013). In regions where adolescent pregnancy remains rampant such as Samburu (50% of 15–19-year-olds ever pregnant) and West Pokot (36%) in Kenya limited access to contraception perpetuates cycles of poverty, school dropout, and intergenerational disadvantage (KNBS, 2022). Thus, expanding contraceptive access is not merely a health intervention but a foundational strategy for advancing gender equality and sustainable development across the continent.

Short-acting methods particularly injectables, oral pills, and male condoms dominate the contraceptive landscape. In Kenya's 2022 Demographic and Health Survey (KDHS), injectables (20%) and implants (19%) were the most common methods among married women, while condoms (20%) led among sexually active unmarried women (KNBS, 2022).This acceleration, however, masks profound intra-regional and subnational inequities. For

example, Kenya's national mCPR reached 57% among married women by 2022 (KNBS, 2022). Yet even within high-performing countries like Kenya, deep subnational inequities persist. Counties such as Mandera (1.8%), Wajir (2.8%), and West Pokot (23.2%) report contraceptive use rates that remain dangerously low, revealing how geography, ethnicity, livelihood systems such as pastoralismand infrastructure gaps can undermine national progress (KNBS, 2022).

LITERATURE REVIEW

Empirical studies consistently demonstrate that improved access correlates with lower total fertility rates (TFR), delayed childbearing, increased birth intervals, and greater alignment between fertility intentions and reproductive outcomes. At the macro level, cross-national analyses reveal that countries with stronger family planning programs and greater contraceptive availability tend to exhibit steeper fertility declines. In SSA, where TFR remains the highest globally averaging over 4.6 children per woman limited access to modern methods is a key driver of sustained high fertility (Prata et al., 2017).

Contraceptive utilization in sub-Saharan Africa (SSA) is profoundly shaped by a woman's parity the with clear and consistent patterns linking parity to both the likelihood and purpose of contraceptive use. Empirical evidence demonstrates that access to modern contraception not only reduces total fertility rates (TFR) but also aligns actual reproductive outcomes more closely with women's stated fertility intentions. In a region where TFR remains the highest globally averaging over 4.6 children per woman limited contraceptive access is a central driver of sustained high fertility (Prata et al., 2017).

Parity progression, the transition from one birth to the next is particularly responsive to access. In Ethiopia, women in communities with functional family planning services and trained providers were 27% less likely to progress from parity two to three, even after controlling for age, education, and wealth (Tilahun et al., 2020). Similarly, in Nigeria, expanded community-based contraceptive distribution was associated with a 15% reduction in higher-order births (parity four or more) over five years (Bankole et al., 2018). These findings underscore that access exerts its strongest influence not in preventing first births, but in curbing higher-parity births, which are often unintended and carry elevated health risks.

This pattern is reinforced by reproductive trajectories defined by parity. Nulliparous women particularly adolescents exhibit the lowest contraceptive use, even when aware of methods, as many consciously delay adoption until after their first birth. In Southern Tanzania, only 4% of contraceptive users were classified as "delayers" (seeking to postpone first birth), and nearly all were unmarried; in contrast, "spacers" (seeking to separate births) constituted 41% of users (Sedekia et al., 2017). This suggests that direct experience with childbirth, rather than abstract planning, often catalyzes contraceptive use. Supporting this, adolescent mothers in Zimbabwe were significantly more likely to use modern contraception than their childless peers, reflecting an experiential awareness of the burdens of early or rapid childbearing (Ngome & Odimegwu, 2019).

As parity increases, contraceptive use typically rises peaking among women with two to three children who seek to limit further childbearing. LARCs are especially well-suited for this group, offering high efficacy and minimal maintenance. In Kenya, women who

received postpartum IUDs before hospital discharge were 40% less likely to have an additional child within two years compared to matched controls (Huber et al., 2021), illustrating how timely access at critical reproductive junctures can effectively decouple sexual activity from fertility. However, this relationship is not strictly linear. Some studies, including analyses of DHS data in Zimbabwe, observe a decline in contraceptive use at very high parities (Ngome & Odimegwu, 2019). This may reflect a combination of factors: women discontinuing methods after achieving desired family size, shifting to non-clinical means of fertility control (e.g., abstinence or reliance on perceived infertility), or abandoning use due to prior negative experiences with side effects—particularly when alternative methods are unavailable (Gebeyehu et al., 2018). In such cases, robust access that includes counseling and method-switching options is essential to sustain coverage over time (Polis et al., 2018).

At the individual level, longitudinal and cross-sectional studies further substantiate this link. Women who report consistent access to a diverse method mix, including long-acting reversible contraceptives (LARCs) such as implants and intrauterine devices (IUDs) are significantly less likely to experience rapid repeat pregnancies or exceed their desired family size. For instance, analysis of DHS data from 27 SSA countries found that women with access to at least three modern contraceptive methods were 32% more likely to achieve their fertility intentions compared to those with access to fewer than two methods (Ahmed et al., 2019). This underscores that access is not merely binary (available or not) but is contingent on method choice, which enables women to select options aligned with their reproductive goals, whether for spacing or limiting births.

Crucially, access influences parity progression the likelihood of transitioning from one birth to the next. A study in Ethiopia using panel data demonstrated that women residing in communities with functional family planning services and trained providers had a 27% lower probability of progressing from parity two to three compared to those in underserved areas, even after controlling for education, wealth, and age (Tilahun et al., 2020). Similarly, in Nigeria, improved access to community-based contraceptive distribution was associated with a 15% reduction in higher-order births (parity four or more) over a five-year period (Bankole et al., 2018). These findings highlight that access operates not only to prevent first births but more powerfully to curtail higher-parity births, which are often unintended and pose greater maternal and child health risks.

The impact of access is especially pronounced among vulnerable subpopulations. Adolescents and young women, who face heightened barriers to contraceptive services, are disproportionately affected by limited access. In Malawi, a quasi-experimental evaluation of youth-friendly health corners showed that improved access to contraceptives among 15–24-year-olds led to a 23% decline in births among nulliparous adolescents over two years, primarily by enabling effective delay of first birth (Kaler et al., 2020). This demonstrates that early access can alter long-term fertility trajectories by preventing the onset of high-parity childbearing.

Parity directly informs a woman's positioning along three key reproductive trajectories: delaying first birth (delayers), spacing subsequent births (spacers), or limiting future childbearing (limiters). These categories reflect personal reproductive intentions rather than merely demographic status. For instance, nulliparous women especially those who are married are significantly less likely to use modern contraception, not solely due to

external constraints, but because personal and cultural expectations often associate the initiation of childbearing with marital fulfillment and social identity (de Vargas Nunes et al., 2019). Even when aware of contraceptive options, many nulliparous women consciously forgo use until after their first birth, viewing childbearing as a prerequisite to contraceptive legitimacy.

Empirical investigations in specific SSA contexts further nuance this relationship. In Southern Tanzania, a repeated cross-sectional study identified three primary user typologies based on reproductive intentions: delayers (seeking to postpone first birth), spacers (spacing subsequent pregnancies), and limiters (preventing future births). While spacing was the dominant motive (41%), only 4% of contraceptive users were delayers, and nearly all were unmarried (Sedekia et al., 2017). Spacing, not limiting or delaying, emerged as the dominant personal motivation among users, suggesting that experiential awareness of the challenges of rapid successive pregnancies motivates contraceptive adoption more powerfully than abstract future planning. Conversely, married adolescents face intense social pressure to conceive early, frequently resulting in unintended pregnancies and limited agency over reproductive timing (de Vargas Nunes et al., 2019).

In Zimbabwe, logistic regression analyses of DHS data corroborate the parity-contraception nexus, demonstrating that adolescent mothers (<19 years) who have already borne children are significantly more likely to use modern contraceptives than their nulliparous peers (Ngome & Odimegwu, 2019). However, a counterintuitive trend emerges at higher parity levels: contraceptive use declines as parity increases. This inverse relationship may reflect a combination of factors, including method discontinuation due to side effects, shifting fertility preferences, or reduced engagement with health services among women who have achieved their desired family size but lack access to permanent methods (Ngome & Odimegwu, 2019).

Conversely, once a woman has borne one or more children, her personal calculus frequently shifts. Empirical evidence from Zimbabwe indicates that adolescent mothers under age 19 who have already experienced childbirth exhibit substantially higher odds of using modern contraceptives compared to their childless peers (Ngome & Odimegwu, 2019). This reflects an internalized recognition of the physical, emotional, and economic implications of repeated or closely spaced pregnancies—a recognition forged through direct reproductive experience. Thus, contraceptive adoption becomes a deliberate strategy for managing future fertility in alignment with personal capacity and aspirations.

However, personal decision-making does not follow a linear pattern with rising parity. Counterintuitively, several studies observe a decline in modern contraceptive use among women at higher parity levels (Ngome & Odimegwu, 2019). This pattern may stem from personal reassessments of fertility goals: some women may perceive that they have achieved their desired family size and thus discontinue contraception, while others may shift toward relying on perceived natural infertility or abstinence rather than clinical methods. In other cases, prior negative experiences—such as side effects from hormonal methods—lead to method discontinuation based on personal risk-benefit evaluations, even in the absence of access barriers (Gebeyehu et al., 2018).

Long-acting reversible contraceptives (LARCs), including implants and intrauterine devices (IUDs), represent a critical option for women whose personal reproductive goals center on birth spacing or limiting. Their high efficacy and reduced need for ongoing

adherence align well with the preferences of women who have already navigated pregnancy and childbirth and seek reliable, low-maintenance methods (Mariam et al., 2018). Personal choice, therefore, increasingly favors LARCs among parous women who prioritize effectiveness and autonomy over short-acting methods requiring daily or monthly compliance. This highlights the marginalization of unmarried adolescents in family planning services, as cultural norms often frame premarital sexual activity as illegitimate, thereby restricting their access to contraception. Conversely, married adolescents face intense social pressure to conceive early, frequently resulting in unintended pregnancies and limited agency over reproductive timing (de Vargas Nunes et al., 2019).

In sum, contraceptive utilization in SSA is profoundly shaped by parity, with nulliparous women facing the greatest barriers due to sociocultural norms and restrictive service environments. Parity structures contraceptive behavior in SSA along a continuum: low use among nulliparous women, rising adoption for spacing after first or second births, and peak use for limiting among women with three or more children followed in some contexts by decline at very high parities. Effective family planning programs must therefore be stage-sensitive, ensuring that nulliparous women who wish to delay first birth have access to appropriate short-acting methods, while parous women especially those seeking to limit are offered highly effective, long-term options like LARCs. Integrating contraception into postpartum and postabortion care, expanding method choice, and supporting seamless method switching are critical to aligning fertility outcomes with women's intentions across all parity levels. Addressing the decline in contraceptive use at higher parities further requires integrated approaches that link family planning with postpartum and postabortion care, ensuring continuity of reproductive health support across the life course.

Problem Statement

In sub-Saharan Africa (SSA), where the total fertility rate remains the highest globally, averaging over 4.6 children per woman—limited access to modern contraception is a key driver of sustained high fertility (Prata et al., 2017). While improved contraceptive access correlates with lower fertility, delayed childbearing, and better alignment between reproductive intentions and outcomes, utilization is strongly mediated by parity. Nulliparous women, especially adolescents, exhibit the lowest contraceptive use, often due to sociocultural norms that prioritize early childbearing after marriage and stigmatize premarital sexual activity (de Vargas Nunes et al., 2019). In Southern Tanzania, only 4% of contraceptive users sought to delay their first birth, compared to 41% using methods to space births (Sedekia et al., 2017).

Contraceptive use typically rises after the first or second birth, peaking among women with two to three children who aim to limit further childbearing. Access to long-acting reversible contraceptives (LARCs) at critical reproductive junctures such as postpartum significantly reduces higher-order births. In Ethiopia, women in communities with functional family planning services were 27% less likely to progress from parity two to three (Tilahun et al., 2020), and in Nigeria, community-based distribution led to a 15% decline in births at parity four or more (Bankole et al., 2018). However, utilization often declines at very high parities, possibly due to method discontinuation from side effects, perceived achievement of desired family size, or lack of counseling and method-switching options (Ngome & Odimegwu, 2019; Gebeyehu et al., 2018).

Crucially, access alone is insufficient; meaningful access requires a diverse method mix. Women with access to three or more modern methods are 32% more likely to achieve their fertility goals than those with fewer options (Ahmed et al., 2019). Yet, family planning programs often fail to deliver stage-sensitive services aligned with women's parity-specific intentions—whether to delay, space, or limit births. This disconnect undermines efforts to prevent unintended first births among adolescents and sustain contraceptive use among high-parity women. Deespite expanded access, contraceptive utilization in SSA remains misaligned with women's evolving reproductive needs across the parity continuum, perpetuating unmet need and unintended fertility, therefore the study explores the linkanges between access and utilization of modern contraceptives and parity in rural – based county in Kenya.

METHODOLOGY

This study employed a cross-sectional household survey design, conducted at a single point in time in Pokot West Sub-county, West Pokot County, Kenya. The target population comprised women of reproductive age (18–49 years) residing in the sub-county, which had an estimated 42,015 households according to the District Health Information System (DHIS, 2022). Pregnant women attending antenatal care services were excluded to minimize recall bias related to recent pregnancy outcomes.

A sample size of 396 respondents was calculated using Yamane's (1967) simplified formula for finite populations:

$$n = \frac{N}{1 + N(e^2)}$$

Where *n* was the desired sample size, *N* was the entire population and *e* was the margin of error (which is 0.05).

To ensure geographical representation, the study used a cluster random sampling technique. Each of the sub-county's administrative wards served as a cluster, and a proportional number of households were randomly selected from each ward. From each selected household, one eligible woman of reproductive age was randomly chosen for interview.

Data were collected using a structured questionnaire, which served as the primary research instrument. Prior to full-scale data collection, the questionnaire underwent validation through a pilot study conducted among female students at Kapenguria Medical Training College—a population demographically similar to the target group. The instrument's internal consistency was assessed using Cronbach's Alpha, confirming acceptable reliability.

All completed questionnaires were reviewed in the field for completeness and logical consistency. Cleaned data were then coded and entered into the Statistical Package for the Social Sciences (SPSS) version 28 for analysis. Descriptive statistics (frequencies, percentages, means, and standard deviations) were used to summarize sociodemographic and reproductive characteristics, while inferential statistics (including correlation) were employed to examine associations between access, contraceptive utilization, and parity-related outcomes, following best practices outlined by Cooper and Schindler (2017).

RESULTS

Socio-demographic Characteristics of the Respondents

The age distribution of the respondents revealed a pronounced youth concentration. Nearly half (48.0%) were aged 18–25 years, while 34.9% fell within the 26–33 age bracket. A smaller proportion(15.0%) were aged 36–41 years, and only 2.2% were between 42 and 49 years. Collectively, 82.9% of respondents were aged 18–33 years, and 97.8% were under 40 years. This distribution is strongly skewed toward younger age groups and aligns closely with national demographic trends, where the majority of Kenya's population is under 35 years of age (Kenya National Bureau of Statistics [KNBS, 2020).

Regarding educational attainment, the vast majority of respondents had completed at least basic schooling: 66.5% reported secondary-level education, 32.4% had attained primary-level education, and only 1.1% held a diploma or its equivalent. Overall, nearly all participants possessed at least a foundational level of formal education, reflecting broader national patterns in educational achievement, particularly the widespread attainment of minimum basic (secondary) education as documented in the Kenya Demographic and Health Survey (KDHS, 2022).

In terms of occupational status, 65.1% of respondents were unemployed, 20.7% were students, 7.4% were formally employed, and 6.8% were self-employed. These figures are consistent with income data, which indicate that 82.8% of respondents earned less than Kshs 10,000 per month. A further 8.7% reported monthly earnings between Kshs 10,001 and Kshs 20,000, while the remaining 8.5% earned between Kshs 20,001 and Kshs 40,000. With respect to religious affiliation, the sample was predominantly Christian: 51.8% identified as Roman Catholic, 33.5% as Evangelical Christian, and 14.4% as Protestant. A negligible proportion (0.3%) reported adherence to indigenous religious traditions.

Descriptive Statistics on Knowledge of Modern Contraceptive

Table 1: Awareness, Knowledge, and Comfort with Contraceptive Methods (N = 295)

Contraceptive Method	Heard of (%)	Knowledge of (%)	Comfortable Using (%)
Male condom	51.2	46.1	77.7
Female condom	1.4	3.7	3.9
Monthly pill	26.8	27.5	40.9
Emergency pill(P2)	17.6	18.3	48.5
Spermicide	1.0	0.8	0.7
Injectables	15.3	6.4	11.5
Implants	0.7	0.7	0.7
Intrauterine Devices (IUDs)	1.2	1.4	2.7

The data in Table 1 reveal significant disparities between awareness, accurate knowledge, and willingness to use specific contraceptive methods among women in Pokot West Sub-county. While abstinence is both the most widely heard of (60.0%) and best understood (80.0%) method, it is also the most preferred natural method, with 48.5% of respondents expressing comfort using it. Among modern methods, the male condom stands out as the most recognized (51.2% awareness), best known (46.1% knowledge), and overwhelmingly preferred (77.7% comfortable using). The emergency pill and monthly pill

follow in preference (48.5% and 40.9%, respectively), despite relatively modest awareness levels (17.6% and 26.8%).

In contrast, long-acting reversible contraceptives (LARCs) including implants, IUDs, and injectables show critically low awareness and knowledge. Only 15.3% of respondents had heard of injectables, and a mere 6.4% demonstrated knowledge of them; implants and IUDs were virtually unknown (<1.5% knowledge). Comfort levels with these methods were correspondingly low (≤11.5%).

These findings contrast sharply with national trends reported in the 2022 Kenya Demographic and Health Survey (KDHS), which found near-universal awareness of modern methods among women of reproductive age: male condoms (97%), injectables (94%), implants (91%), and pills (91%) (KDHS, 2022). The KDHS also notes that among sexually active unmarried women, male condoms are the most commonly used method (20%), followed by injectables (16%) and implants (11%).

The pronounced gap between local awareness and national benchmarks particularly for highly effective modern methods suggests significant deficiencies in family planning outreach, education, and service availability in Pokot West. The high preference for male condoms and abstinence, coupled with minimal familiarity with LARCs, reflects both cultural acceptability and limited exposure to comprehensive contraceptive information. This underscores the need for targeted, context-sensitive interventions to bridge knowledge gaps and expand method choice in this underserved region.

The low awareness and knowledge of long-acting reversible contraceptives (LARCs) such as implants and intrauterine devices (IUDs) among women in Pokot West align with broader evidence from pastoralist and rural communities in Kenya, where access to comprehensive family planning information and services remains constrained. As Mutua et al. (2021) observed in arid and semi-arid regions of Kenya, LARCs are often underutilized not due to lack of interest, but because of limited provider training, stockouts, and insufficient community-level education—factors that suppress both awareness and uptake despite national policy support.

The high awareness and preference for male condoms and abstinence reflect both accessibility and socio-cultural acceptability. Male condoms are widely distributed through community health workers, pharmacies, and youth-friendly corners, contributing to relatively higher recognition even in remote areas (Kasozi et al., 2020). Moreover, abstinence is often socially sanctioned, particularly among unmarried women and adolescents, which may explain its high reported knowledge (80%) and preference (48.5%)—even though it is not consistently effective in real-world use (Ganle et al., 2019).

The disparity between local awareness levels in Pokot West and national benchmarks from the Kenya Demographic and Health Survey (KDHS, 2022) underscores the well-documented urban–rural and regional inequities in reproductive health service delivery. KDHS (2022) reports near-universal awareness of modern contraceptives nationally (e.g., 97% for male condoms, 94% for injectables), but such averages mask significant subnational variation. Studies confirm that women in marginalized, pastoralist counties—including West Pokot—consistently exhibit lower contraceptive knowledge and use due to geographic isolation, limited health infrastructure, and cultural norms that prioritize high fertility (Opiyo et al., 2021; Wamalwa et al., 2023).

Furthermore, the gap between "hearing of" a method and possessing functional "knowledge" of it—particularly for hormonal and LARC methods—is consistent with findings by Obare et al. (2020), who demonstrated that in rural Kenya, exposure to contraceptive messaging does not automatically translate into accurate understanding of mechanism, efficacy, or access points. This knowledge deficit directly limits informed method choice and contributes to high discontinuation rates (Polis et al., 2018).

Finally, the strong preference for male condoms among respondents mirrors KDHS (2022) data showing condoms as the most commonly used method among unmarried sexually active women (20%), valued for dual protection against pregnancy and sexually transmitted infections (STIs). However, reliance on condoms and abstinence—both user-dependent methods—may increase vulnerability to unintended pregnancy if not supported by access to more effective, longer-term alternatives (Darroch et al., 2016).

Descriptive statistics on Contraceptive Access and Utilization

Figure 1 illustrates where respondents obtained contraceptive methods. Government health facilities were the most common source (76.3%), closely followed by family planning clinics (74.9%). Nearly half accessed contraceptives from private health clinics (47.7%) or chemists/pharmacies (44.4%), while only 12.3% reported obtaining methods from relatives. These patterns reflect a dual reliance on public and private sectors, though the public system remains dominant. The results are consistent with national data from the KDHS (2022), which reports that 62% of Kenyan women obtain modern contraceptives from public facilities—including hospitals (24%), dispensaries (23%), and health centres (14%)—while 33% rely on the private sector (e.g., pharmacies: 15%; private hospitals/clinics: 16%). The KDHS further notes that public facilities are the primary source for long-acting methods such as implants (86%) and injectables (63%), whereas contraceptive pills are more commonly sourced from private outlets (63%).

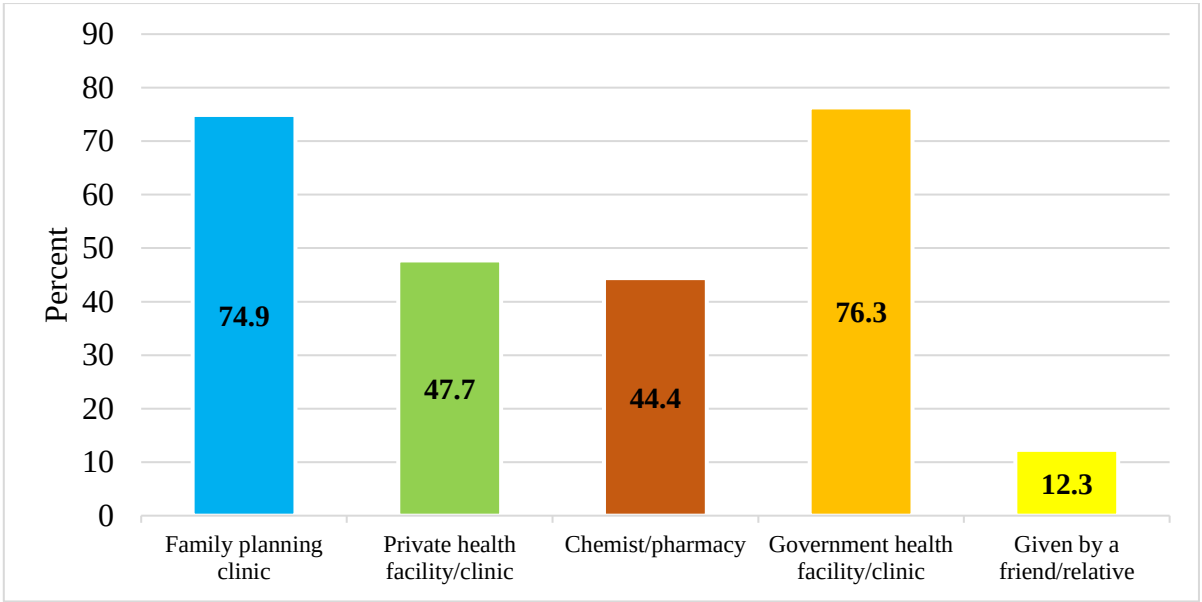

Figure 3: Main Sources of Contraceptives

Source: Survey Data (2024)

Figure 2 shows that only 20.4% of respondents had used a contraceptive method in the past three months, and 24.5% reported current use at the time of the survey. This implies that over 75% of women of reproductive age in the sample were not using any form of contraception. The low prevalence of use closely mirrors county-level estimates from the KDHS (2022), which reported a modern contraceptive prevalence rate (mCPR) of 23.5% in West Pokot County among the lowest in Kenya. This persistent underutilization, despite high exposure to information through health facilities, suggests a gap between awareness and actual adoption, likely influenced by sociocultural norms, method availability, and quality of counseling.

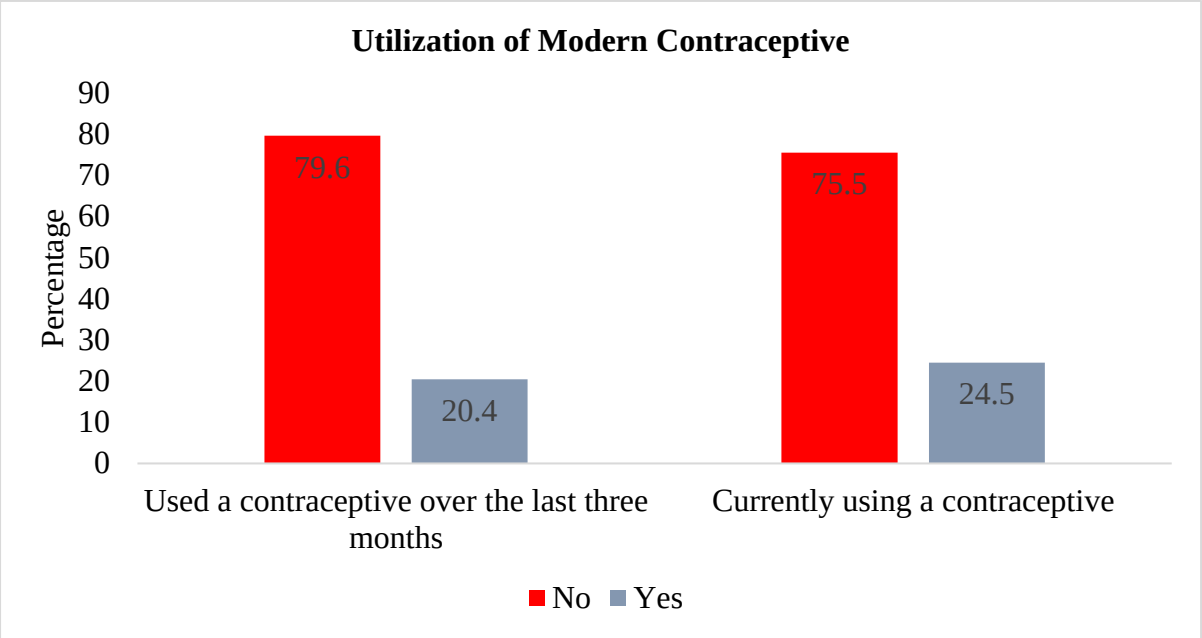

Figure 4: Utilization of Modern Contraceptive

Source: Survey Data (2024)

Association between Parity Levels and Awareness, Knowledge, and Comfort Levels of Modern Contraceptives

The study used correlation analysis to evaluate the relationship between parity levels and Awareness, Knowledge, and Comfort levels of modern contraceptive utilization to unravel the linkages between knowledge levels on modern contraceptive and parity level and the results are indicated in Table 3 below.

The relationship between parity, defined as the number of live births a woman has experienced and contraceptive behavior is central to understanding fertility dynamics in sub-Saharan Africa. While demographic theory posits that women's contraceptive preferences evolve predictably across reproductive stages, shifting from spacing to limiting as parity increases, the actual patterns of utilization are heavily mediated by method availability, sociocultural norms, and health system capacity. The correlation statistics presented in Table 2 from a 2024 household survey in Pokot West Sub-county, Kenya, offer a granular view of how awareness, knowledge, and comfort with specific modern contraceptive methods relate to parity.

Table 2: Correlations between utilization and Awareness, Knowledge, and Comfort levels of Modern Contraceptives

	Correlation based on Awareness, Knowledge, and Comfort levels			
		Heard of (%)	**Knowledge of (%)**	**Comfortable Using (%)**
	Number of Children	Parity levels		
Number of Children	1			
Parity Levels	0.909**			
Male Condom	0.077	0.096	-0.111*	-0.135**
Female Condom	-0.319	-0.339	-0.236	-0.289
Monthly Pill	0.052	0.099	0.000	-0.149**
Emergency pill	-0.046	0.016	-0.167**	-0.114*
Spermicide	0.119	0.066	-0.141	0.172
Injectables	-0.016	0.063	0.111*	-0.111*
Implants	-0.095	-0.111*	-0.111*	0.113*
Intrauterine Devices	0.133*	0.161**	-0.0157**	0.028

The male condom exhibits a non- statistically significant correlation with parity but as both knowledge ($r = -0.135$, $p < 0.01$) and comfort with use ($r = -0.111$, $p < 0.05$) increases, the number of children tends to reduce. This pattern aligns with reproductive life-course theory and broader empirical findings across sub-Saharan Africa. Male condoms are primarily adopted by younger, unmarried, or low-parity women not only for pregnancy prevention but also for dual protection against sexually transmitted infections (STIs), including HIV (Kaler et al., 2020). Once women marry and begin childbearing, their contraceptive objectives typically shift from STI prevention and first-birth delay toward birth spacing and, eventually, fertility limitation,goals for which barrier methods like condoms are less suited, especially in contexts requiring consistent spousal negotiation (Ganle et al., 2019). The Kenya Demographic and Health Survey (KDHS, 2022) corroborates this trend nationally: while 97% of women report awareness of male condoms, only 7% of currently married women use them, compared to 20% of unmarried sexually active women. Thus, the non-significant correlation observed in Pokot West reflects a normative shift driven not by ignorance but by evolving reproductive priorities and relational dynamics.

The female condom shows consistently non-significant negative correlations across all domains; awareness ($r = -0.319$), knowledge ($r = -0.339$), and comfort ($r = -0.289$), likely due to the method's extremely low visibility. The female condom occupies a marginal position in Kenya's family planning landscape. It is rarely stocked in public health facilities, seldom promoted by providers, and often perceived as culturally inappropriate or physically cumbersome (Sedekia et al., 2017). Unlike the male condom, it offers no clear advantage in autonomy in settings where male partner approval is required for any form of contraception. Consequently, even as women progress to higher parity and seek reliable methods, the female condom remains irrelevant due to systemic neglect. KDHS (2022) does not report its use prevalence, underscoring its negligible role in national programming. The negative correlations likely reflect a complete absence of exposure rather than active rejection; in a resource-constrained environment like West Pokot, scarce family planning

resources are directed toward more scalable and accepted methods, leaving the female condom invisible.

Oral contraceptive pills display a non-significant correlation with parity levels but a significant negative correlation with comfort ($r = -0.149$, $p < 0.01$). This divergence reveals a critical insight: while women may become more familiar with pills through repeated interactions with health services such as during antenatal care or child immunization visits, their willingness to use them declines with parity. Pills require daily adherence, a significant challenge for women with multiple children, domestic responsibilities, and economic survival tasks. Empirical studies in Ethiopia and Kenya document high discontinuation rates for oral contraceptives, primarily due to side effects (e.g., nausea, irregular bleeding) and difficulties with consistent use (Gebeyehu et al., 2018). As parity increases, women increasingly favor "forgettable" methods that do not demand daily vigilance. KDHS (2022) reports that while 91% of Kenyan women know of pills, only 10% of married women currently use them, far lower than injectables (34%) or implants (22%). The negative comfort correlation thus reflects experiential learning: higher-parity women recognize the practical limitations of pills for long-term fertility regulation in their daily lives.

The emergency contraceptive (EC) pill shows non-significant correlations with parity with an unexpected negative correlations on both awareness ($r = 0.167$, $p < 0.01$) and knowledge ($r = 0.114$, $p < 0.05$) of contraceptives. This finding reflects conventional demographic assumptions, as EC is designed for post-coital use following unprotected sex or contraceptive failure and is not intended for ongoing fertility management. However, in contexts of limited contraceptive access, EC may serve as a reactive strategy for young women who face unintended pregnancy. Polis et al. (2018) note that inconsistent access to a full method mix often forces women into crisis-driven contraceptive behaviors, including reliance on EC as a "last resort." Alternatively, repeated contact with health facilities for childbirth or child health services may increase incidental exposure to EC information, even if providers do not actively promote it. Unlike in urban Kenya, where EC is increasingly available over the counter, rural women in West Pokot likely encounter it only through facility-based interactions, explaining its rising familiarity with parity-driven service contact. Thus, the correlation may signal unmet need rather than planned fertility regulation.

Injectables display non-significant correlations with parity: awareness ($r = -0.016$), knowledge ($r = 0.063$), comfort ($r = 0.111$, $p < 0.05$). This is given that injectables are the most widely used modern method in Kenya, with 34% of married women relying on them (KDHS, 2022), and are typically favored by multiparous women for their privacy, efficacy, and ease of administration every 2–3 months. The weak or negative correlations in Pokot West suggest significant access barriers. Pastoralist regions often suffer from chronic stockouts, irregular outreach, and insufficiently trained providers capable of administering injections (Mutua et al., 2021). Women may receive one injection but discontinue due to inability to access follow-up doses. Additionally, persistent rumors linking injectables to long-term infertility or weight gain may deter higher-parity women who fear irreversible health consequences (Opiyo et al., 2021). Thus, despite national dominance, injectables fail to exhibit the expected positive parity association in this underserved context, reflecting structural rather than behavioral constraints.

Implants, a highly effective, long-acting, reversible method show negative correlations with both knowledge ($r = -0.111$, $p < 0.05$) and comfort ($r = -0.111$, $p < 0.05$), with no meaningful link to parity levels. This reflects the national trends: KDHS (2022) that reports that 91% of women know of implants and 22% of married women use them, with uptake rising significantly after the second birth. The discrepancy points to a critical service delivery gap. Implant insertion requires trained clinicians, sterile equipment, and consistent commodity supply, resources frequently unavailable in remote West Pokot health facilities. Community health workers, who serve as frontline family planning providers in pastoralist areas, are typically not authorized or trained to insert implants (Wamalwa et al., 2023). Consequently, even higher-parity women who would benefit most from long-term, low-maintenance contraception never encounter the method. The negative correlation likely reflects absence of exposure: as parity increases, women interact more with overburdened local clinics that only offer short-acting methods like pills or condoms, never implants. This represents a systemic failure to deliver a key method precisely where demographic need is greatest.

IUDs present a notable paradox: significant positive correlations with awareness ($r = 0.133$, $p < 0.05$) and knowledge ($r = 0.161$, $p < 0.01$), but near-zero comfort ($r = -0.016$). This may suggests that while higher-parity women learn about IUDs likely through antenatal or postpartum care they remain unwilling to use them. IUDs are theoretically ideal for women seeking to limit fertility: they are highly effective, long-lasting (5–10 years), non-hormonal (in the case of copper IUDs), and do not interfere with breastfeeding. Huber et al. (2021) demonstrated that postpartum IUD insertion in Kenya reduced repeat pregnancies by 40% within two years. However, in rural communities like West Pokot, IUDs are stigmatized by persistent myths linking them to infertility, chronic pelvic pain, and the presence of a “foreign object” in the uterus (Ganle et al., 2015). Provider bias further limits uptake: many clinicians assume IUDs are unsuitable for women who have not yet completed childbearing, delaying counseling until higher parity but by then, misinformation is entrenched. Thus, the data reveal a critical disconnect: parity increases informational exposure through repeated health system contact, but cultural misconceptions and weak provider support suppress *acceptability* and actual use.

Spermicides show inconsistent and non-significant correlations with awareness ($r = 0.119$) and comfort ($r = 0.172$) and knowledge ($r = 0.066$). Given their extremely low prevalence globally and absence from KDHS (2022) reporting, these statitstics are likely statistical artifacts with no substantive meaning. Spermicides are rarely available in Kenya’s public health system, require precise timing, and offer low efficacy when used alone. They play no meaningful role in parity-related contraceptive behavior in this context and can be considered irrelevant for policy or programmatic purposes.

Collectively, these method-specific correlations reveal that the relationship between parity and contraceptive utilization in Pokot West is not governed by reproductive rationality alone but is profoundly shaped by structural and contextual factors. While theory predicts that higher-parity women will adopt long-acting, highly effective methods like implants and IUDs, the data show weak or even negative associations—indicating that these methods are simply not accessible or acceptable in this setting. Conversely, methods like condoms and pills, though more familiar, are abandoned as parity increases due to their user-dependent nature and logistical demands.

These findings underscore a critical policy insight: family planning programmes must go beyond awareness-raising to ensure actual access, method choice, and quality counseling. In marginalized regions like West Pokot, the health system fails to deliver the full contraceptive method mix precisely when women's fertility intentions shift toward limiting. Without trained providers, reliable supplies, and community engagement to counter myths, even high awareness of LARCs will not translate into use.

DISCUSSION

The data reveal a clear hierarchy: user-controlled, short-acting, non-invasive methods (male condoms, injectables) are most favorably perceived, while provider-dependent, long-acting, or less familiar methods (IUDs, implants, female condoms, spermicides) are viewed with skepticism or disfavor. This pattern is corroborated by large-scale surveys across sub-Saharan Africa. For example, the Performance Monitoring for Action (PMA) project in six African countries found that while injectables and condoms dominate use, LARCs remain underutilized despite availability, largely due to misinformation and provider bias (PMA, 2023).

The low perception of IUDs and implants is particularly concerning from a public health standpoint. These methods are among the most effective reversible contraceptives (failure rate <1%), yet their potential to reduce unintended pregnancy and maternal mortality remains unrealized in many African settings. Interventions that combine community education, provider training, and counseling on full method mix—as piloted in Ethiopia's LARC scale-up initiative have shown success in shifting perceptions and increasing uptake (Tulu & Gebremariam, 2018).

Moreover, the high favorability of male condoms suggests an opportunity to leverage their dual protection benefit in integrated HIV and family planning programs. However, reliance on short-acting methods also poses risks: discontinuation rates are high, and gaps in use can lead to unintended pregnancy. Thus, while the data reflect current preferences, they also highlight the need for demand-shaping strategies that address myths, expand informed choice, and normalize LARCs as safe and appropriate for all women, including adolescents and nulliparous individuals. In sum, these ratings do not merely reflect personal taste but are shaped by structural factors; health system biases, gender norms, information gaps, and historical program emphasis.

CONCLUSION

While awareness of modern contraceptive methods is generally high, actual use particularly of long-acting reversible contraceptives (LARCs) such as implants and IUDs remains low or misaligned with parity. Negative or non-significant correlations between parity and preferred LARCs reflect not a lack of reproductive intent to limit fertility, but rather systemic failures in service delivery: chronic stockouts, insufficient provider training, geographic inaccessibility, and restrictive task-shifting policies that prevent community health workers from offering comprehensive method choices.

Short-acting methods like oral pills and male condoms, though widely known, are increasingly abandoned as parity rises due to their user-dependent nature, side effects, and

incompatibility with the realities of managing multiple children and household responsibilities. Meanwhile, the female condom and spermicides remain functionally irrelevant due to neglect in programming, lack of availability, and cultural inappropriateness.

Notably, the IUD presents a paradox: higher-parity women demonstrate greater awareness and knowledge, likely through repeated contact with maternal health services, yet comfort and use remain negligible. This disconnect underscores the power of entrenched myths, misinformation, and provider bias in shaping contraceptive acceptability even when clinical need is highest. The modest positive association between parity and emergency contraceptive awareness further signals unmet need rather than planned fertility regulation, suggesting that some women resort to reactive, crisis-driven contraceptive strategies in the absence of consistent access to effective methods.

Collectively, these findings challenge the assumption that increasing knowledge alone will lead to appropriate contraceptive use. In marginalized, pastoralist settings like West Pokot, the bottleneck lies not in demand creation but in equitable access, method availability, and culturally competent counseling.

RECOMMENDATION

To align family planning outcomes with women's evolving reproductive goals, policy and programming must prioritize:

- Strengthening health system capacity to deliver the full method mix including LARCs—at the primary care level, particularly through task-sharing with trained community health workers.
- Ensuring consistent commodity security to prevent discontinuation due to stockouts, especially for injectables and implants.
- Implementing targeted community engagement to counter misinformation, particularly around IUDs and hormonal methods, while involving men and community leaders in contraceptive dialogue.
- Integrating high-quality contraceptive counseling into routine maternal and child health touchpoints to support informed, timely method transitions aligned with parity and fertility intentions.

Without addressing these structural and sociocultural barriers, efforts to reduce unintended pregnancies and support fertility autonomy in high-need regions will remain undermined—despite high levels of awareness and clear demographic rationale for method adoption.

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