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THE UTILIZATION OF FEMALE CONDOMS AMONG YOUNG WOMEN IN KISAUNI SUB-COUNTY, MOMBASA, KENYA

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ABSTRACT

Background: To determine the prevalence and factors associated with the utilization of female condoms among young women in Kisauni Sub-County, Mombasa, Kenya.

Design: Mixed method cross-sectional study.

Setting: Kisauni Sub-County, the largest sub-county in Mombasa County, Kenya.

Subjects: Sexually active women aged 18–24 years residing in Kisauni Sub-County.

Main outcome measures: Prevalence of female condom use and its association with demographic, knowledge-related, and attitudinal factors.

Results: Of 148 participants, only 12.8% (19) reported ever using a female condom. Awareness was moderate 67.6% (100), yet only 39.9% (59) knew how to use the device. Knowledge of HIV and Sexually Transmitted Infection prevention was strongly associated with utilization ($p < 0.01$). Attitudes toward ease of use significantly influenced uptake, as many perceived female condoms to be difficult compared to male condoms. No significant associations were found between demographic factors (age, marital status, education, religion) and utilization. Partner support emerged as the primary motivator for use.

Conclusion: Female condom utilization among young women in Kisauni is low despite moderate awareness. Knowledge gaps, negative perceptions, and limited access hinder adoption. Community-based education, improved availability, and partner-inclusive interventions are needed to enhance uptake.

Keywords: Female condom, utilization, young women, Kenya, reproductive health

INTRODUCTION

Unintended pregnancies and sexually transmitted infections (STIs), including HIV, remain major reproductive health concerns among young women in sub-Saharan Africa. In Kenya, HIV prevalence disproportionately affects women aged 18–24 years, who also face high rates of unintended pregnancies, maternal morbidity, and unsafe abortions.¹ Dual-protection contraceptives such as female condoms provide an opportunity for women to gain greater control over their sexual and reproductive health.²

Despite being available for over two decades, female condoms contribute to less than 1% of contraceptive use globally.³ Barriers to adoption include limited access, lack of knowledge, negative perceptions regarding ease of use, and socio-cultural norms that restrict women from initiating condom use.⁴ ⁵ In Kenya, the Kenya Demographic and Health Survey (KDHS 2022) reported female condom use at only 2.6% among sexually active women compared to 29.3% for male condoms.⁶

The Kisauni Sub-County in Mombasa County has a high burden of HIV and unintended pregnancies. Understanding the factors influencing female condom use among young women is crucial for targeted interventions. This study aimed to determine the prevalence and factors associated with female condom utilization among young

women aged 18–24 years in Kisauni Sub-County, Mombasa.

MATERIALS AND METHODS

Study design and setting

This was a community-based mixed method cross-sectional study conducted in Kisauni Sub-County, Mombasa, Kenya. Kisauni covers an area of 106.12 km² with a population of approximately 292,000 residents.

Study population

The study population included young women aged 18–24 years who were residents of Kisauni, sexually active or had been sexually active previously, and provided informed consent.

Inclusion criteria

- Women aged 18–24 years.
- Sexually active residents of Kisauni Sub-County.

Exclusion criteria

- Women unable to provide informed consent.
- Women with cognitive or communication difficulties.

Sample size and sampling

Using Cochran's formula with a prevalence (p) of 10.8% margin of error 5%, and $z=1.96$, the required sample size was 148.⁷ A stratified random sampling approach was used, with sub-locations as strata. Eligible women were randomly selected from households.

Data collection

Structured questionnaires collected data on socio-demographics, prevalence of female condom use, knowledge, and attitudes. Focus group discussions (FGDs) explored deeper attitudinal and cultural factors. Data collectors were trained, and confidentiality was maintained.

Data analysis

Data were entered into SPSS v26. Descriptive statistics summarized demographic data. Chi-square tests assessed associations between female condom use and demographic, knowledge-related, and

attitudinal factors. Significance was set at $p<0.05$.

Ethical considerations

Ethical approval was obtained from the JKUAT Ethics Review Committee, License number JKU/IERC/02316/0048 and NACOSTI, license number 523803. Written informed consent was obtained from all participants.

RESULTS

Demographic characteristics

All 148 selected participants responded (100% response rate). Most 66(44.6%) were aged 20–22 years. The majority were unmarried 123(83%), had secondary education 73(49%), and were informally employed 81(55%). Christians and Muslims were almost equally represented.

Table 1: Demographic Characteristics of the study participants

Age in years	Marital Status	Education	Employment	Religion	No. of Children
18-19 35(23.64%)	Unmarried 123(83%)	Primary 30(20%)	Informal 81(55%)	Christian 71(48%)	None 110(74.32%)
20-22 66(44.6%)	Divorced/Separated 3(2%)	Secondary 73(49%)	Formal 4(3%)	Muslim 68(46%)	1-3 Children 27(18.07%)
23-24 47(31.75%)	Married 22(15%)	Tertiary 44(30%)	Student 62(42%)	Hindu 9(6%)	4-5 Children 11(7.61%)

Prevalence of female condom use

Only 19 participants (12.8%) reported ever using a female condom. The method was generally used infrequently, with 125 (84.2%)

participants reporting rare use. Among the users, the leading motivators were partner support (11, 7.4%) and pregnancy prevention (15, 10.4%).

Table 2: Prevalence and motivations for female condom use

Characteristic of female condom use	Frequency	Percentage
Ever used female condom	19	12.8
Female Condom use during the first sexual encounter	1	0.7
FC use in the recent sexual encounter	3	2
Frequency of female condom use		
Sometimes	3	15.8
Rarely	16	84.2
Motivation to use FC during sex		
Partner support	4	7.4
Prevention of pregnancy	16	10.8
HIV/AIDS prevention	11	2.7

Knowledge-related factors

Overall, 67.6% had heard of female condoms, but only 39.9% knew correct usage.

Knowledge of HIV/STI prevention was strongly associated with utilization ($p < 0.001$). Skills in using female condoms also significantly influenced use ($p < 0.01$).

Table 3: Knowledge related factors influencing female condom use

Knowledge Domain	Frequency	FC. Use	χ^2 , df, p	Phi	Logistic Regression(P,OR)
Ever Heard of the female condom	100 (67.6%)	18 (94.7%)	$\chi^2=7.343$ df =1 p=0.007	0.223	P=0.392 OR=3.946
Skills on female condom use	59 (39.9%)	18 (94.7%)	$\chi^2=7.343$ df =1 p=0.007	0.430	P=0.28 OR=0.78

HIV/AIDS and other STDs Prevention	137 (92.6%)	8 (42.1%)	$\chi^2=80.681$ df=1 p=0.000	0.738	P=0.997 OR=65
Pregnancy Prevention	132 (89.2%)	3 (15.8%)	$\chi^2=121.799$ df=1 p=0.000	0.907	P=0.996 OR=23
Reuse of female condom	103 (69.6%)	19 (100%)	$\chi^2=9.524$ df=1 p=0.002	0.254	P=0.997 OR=65

Attitudes toward female condoms

Many participants perceived female condoms as difficult to insert and less

comfortable than male condoms. Attitudes toward ease of use significantly predicted utilization ($p<0.05$).

Table 4: Attitudes related factors influencing female condom use

Attitude Domain	Strongly Agree	Agree	Undecided	Disagree	χ^2 df p	Effect size(phi)
Attitude on FC towards protection against pregnancy compared to the male condom	26 (17.6%)	37 (25%)	35 (23.6%)	48 (32.4%)	$\chi^2=4.971$ df=4 p=0.290	0.290
Attitude towards Ease of use of FC compared to the male condom	51 (34.7%)	46 (31.3%)	39 (26.5%)	11 (7.5%)	$\chi^2=9.349$ df=3 p=0.025	0.252
Offers better Protection against	85 (57.4%)	41 (27.7%)	21 (14.2%)	1 (0.7%)	$\chi^2=5.345$ df=3 p=0.148	0.19

STDs, HIV/AIDS included						
Female condom makes it difficult to achieve female orgasm	53 (35.8%)	29 (19.6%)	57 (38.5%)	9 (6.1%)	$\chi^2=9.558$ df =3 p=0.023	0.254

Association with demographics

No significant associations were found between age, marital status, education,

employment, or religion and female condom use ($p>0.05$).

Table 5: Relationship between demographics and female condom use

Variable	Frequency	FC. Use	χ^2 , df, p	Logistic regression	Effect size
Age in Years					
18-21	78 (52.70%)	9 (47.37%)	$\chi^2=0.249$	P=0.813	0.041
22-24	70 (47.30%)	10 (52.63%)	df =1 p=0.618	OR=1.042	
Marital status					
Married	22 (15.9%)	4 (21.1%)	df =2 p=0.502		0.084
Unmarried	123 (83.1%)	15 (78.9%)		P=0.972 OR=0.41	
Divorced/Separated	3 (2.0%)	0 (0%)			
Education					
Primary	30 (20.3%)	3 (15.8%)	$\chi^2=0.530$ df =2 p=0.767	P=0.471 OR=0.457	0.060
Secondary	73 (49.3%)	9 (47.4%)			
Tertiary	45 (30.4%)	7 (36.8%)			
Employment					
Informal	81 (54.7%)	10 (52.6%)	df =2 p=0.178	P=0.449 OR=2.373	0.153
Formal	5 (3.4%)	2 (10.5%)			
Student	62 (41.9%)	7 (36.8%)			

Religion					
Christian	71 (48.0%)	10 (52.6%)	$\chi^2=1.434$ df =2	P=0.999 OR=0.211	0.099
Islam	68 (45.9%)	9 (47.4%)	p=0.488		
Hindu	9 (6.1%)	0			

Qualitative Data on the Attitudes related factors influencing female condom use

The qualitative data analysis on attitudes related factors influencing female condom use aimed to explore and understand the complex and nuanced perceptions, beliefs, and social influences that shape young

women's attitudes towards female condoms. This analysis delves into the various individual, relational, and cultural factors that impact the acceptance, usage, and perceptions of female condoms, providing a comprehensive understanding of the attitudinal landscape that affects their utilization.

Table 6: Attitudes related factors influencing female condom use

Main Themes	Sub Themes	Category
1. Positive Attitudes	1. Personal	Empowerment and control Protection and safety Comfort and convenience
	2. Cultural	Enhanced sexual pleasure Privacy and Autonomy
2. Negative Attitudes	1. Personal	Stigma and embarrassment Partner resistance
	2. Cultural	Perceived ineffectiveness Discomfort and inconvenience Cost and accessibility

Positive Attitudes

The focus group discussions conducted with both non-married and married women revealed several key positive attitudes

towards the use of female condoms. Participants expressed a strong sense of empowerment and control when using female condoms. Non-married participant N1 stated, "I feel empowered because I don't have

to rely on my partner to protect me. I can take charge of my own protection." Similarly, married participant M1 shared, *"It's a bit of a relief knowing that I have a choice in contraception. It feels like I have more control over my sexual health."* Both non-married and married women acknowledged the protective benefits of female condoms. Non-married participant N2 noted, *"I believe they are effective. I use them because I want to be safe from STIs and also prevent pregnancy."* Married participant M2 added, *"I trust female condoms for protection. They're a good backup method to other forms of contraception we use."*

Comfort and convenience were frequently mentioned as positive aspects of female condom use. Non-married participant N3 said, *"I find them quite comfortable once you get used to them. It just takes a bit of practice to insert them properly."* Some participants reported that female condoms enhanced sexual pleasure. Non-married participant N4 observed, *"I actually find that female condoms can enhance pleasure because they are softer and fit more closely."* Similarly, married participant M4 mentioned, *"For me, it's more about the sensation being different, not necessarily better or worse. It's just a different experience."*

Privacy and autonomy emerged as significant positive themes. Married participant M5 agreed, saying, *"It's crucial for me. I prefer to have control over my own protection and not have to discuss it every time."*

Negative Attitude

The focus group discussions with both non-married and married women also

highlighted several negative attitudes towards the use of female condoms.

Concerns about the effectiveness of female condoms were voiced by participants. Non-married participant N8 admitted, *"I sometimes worry about whether they're as effective as male condoms. There's still a bit of doubt in my mind."*

Issues of discomfort and inconvenience were reported. Non-married participant N9 mentioned, *"Occasionally, they can be a bit uncomfortable if not inserted properly, which can be frustrating."*

Participants expressed feelings of stigma and embarrassment associated with using female condoms. Non-married participant N6 shared, *"Yes, I've felt embarrassed buying them. Sometimes I worry about what people might think."*

Resistance from partners was a significant concern. Non-married participant N7 explained, *"My partners have sometimes been skeptical, thinking they might not be as effective or comfortable."*

DISCUSSION

The study focused on young women aged 18 to 24 years, representing the target age group. The majority of participants had achieved at least secondary education, indicating a potential positive influence on their knowledge and comprehension of sexual health matters, including contraceptive options like female condoms. Higher education levels are often associated with improved access to information and the ability to critically evaluate health-related

resources.¹² This suggests that young women with higher educational backgrounds may be more receptive to educational campaigns about female condoms and more likely to make informed decisions regarding their use.

The demographic profile also revealed that most participants were unmarried and childless. This demographic characteristic is crucial for understanding the sexual behavior and contraceptive needs of the study population. Unmarried and childless individuals may prioritize preventing unintended pregnancies and protecting against sexually transmitted infections (STIs).²³ They may therefore be more inclined to consider female condoms as a contraceptive method.

Furthermore, the prevalence of informal employment among participants suggests potential economic limitations in accessing and utilizing female condoms.¹⁴ Economic constraints can serve as significant barriers to contraceptive use, including female condoms. The affordability of female condoms may pose challenges for individuals with limited financial resources hindering their ability to purchase or access these contraceptives regularly.²⁵

The diverse religious affiliations among participants may also influence their attitudes towards female condoms.⁶ Religious beliefs can shape individuals' perspectives on sexual health and contraceptive practices.¹⁷ These demographic characteristics provide crucial context for interpreting the study findings.

Low uptake of female condoms, 19 (12.8%), parallels findings from Kenya, Ethiopia, and Tanzania.^{8,10} Many participants had never utilized the method, 129 (87.2%). Rare use was common, and partner support was low.

During FGDs, single women demonstrated more familiarity with female condoms than married women, suggesting potential gaps in sexual health education among married women. Married women also expressed dissatisfaction due to discomfort or noise.

These findings echo insights from previous reviews and regional studies identifying limited awareness, misconceptions, poor access, and partner resistance as barriers to uptake.^{11,12} Johnson and Smith's systematic review identified misconceptions and knowledge gaps among young women in sub-Saharan Africa.¹³ Ahmed and Mohammed found similar barriers among urban Nigerian women.¹⁴ Cultural and relational barriers identified in Ghana and rural South Africa also align with the present study.^{15,16} Intervention studies have shown that skills-training workshops, demonstrations, and gender-sensitive education significantly improve uptake.¹⁷⁻¹⁹

A significant relationship was observed between knowledge and utilization ($p=0.007$). Awareness positively influenced use. This aligns with research among U.S. college students where misconceptions and limited practical knowledge negatively impacted uptake.²⁰ Hands-on demonstrations increased willingness to use female condoms in Australia.²¹

European studies similarly highlight the gap between awareness and skill.²² Studies from

China and Malaysia demonstrate that culturally sensitive educational programs increase acceptance.^{23,24} Findings from African contexts emphasize the importance of knowledge and skill in determining use.^{10,25}

Perceived protective benefits strongly predicted use—consistent with findings from South Africa and Uganda.^{26,27} However, cultural taboos hinder uptake in Asia and South America.¹⁴ FGDs revealed some uncertainty regarding pregnancy prevention and misconceptions about reuse—issues mirrored in Ghanaian studies,²⁰ and in the UK and Australia.²⁰⁻²²

Concerns about reuse were mostly rejected, aligning with evidence from South Africa, but contradicting practices in settings with limited access.^{18,19,26} Other studies show similar patterns of concern about breakage and hygiene.^{13,14} However, some South African women believed reuse was possible due to economic pressures.²⁵

Participants expressed mixed attitudes toward effectiveness and ease of use. Many found female condoms challenging to use—consistent with earlier findings.¹⁰ Attitudes toward sexual pleasure influenced utilization. Concerns about interference with orgasm align with previous research.^{22,25}

Partner resistance was widely reported and reflects findings from prior studies.^{13,16} Perceptions of reduced sexual pleasure and inconvenience also mirror existing evidence.^{16,17} Positive attitudes included empowerment, privacy, comfort, and enhanced pleasure—supported by literature

documenting improved agency, protection, and acceptance.^{18,23}

Stigma and embarrassment remain significant barriers.²⁴ Partner resistance echoes findings from Gibbs et al.²⁶ Concerns about effectiveness reflect earlier work.²⁵ Discomfort parallels findings in other African contexts.¹⁶ Economic barriers and limited availability have also been widely cited.¹⁷

The study found no significant association between age and utilization. This contrasts with Ghanaian findings showing age-dependent uptake.¹⁸ A Kenyan study found that younger women were inconsistent condom users with non-regular partners, suggesting contextual variability.¹⁹

No significant association was found between marital status and utilization, differing from the Kenyan findings.¹⁹ Education level also showed no significant association, contrasting with Ghanaian and Ugandan evidence.^{18,20} Similarly, no association was found between employment status or religion and use—contrary to studies from Ghana and the U.S., which indicated religion as a barrier.^{20,21} These inconsistencies highlight the context-dependent nature of demographic influences and the need for nuanced, targeted interventions.

CONCLUSION

Female condom utilization among young women in Kisauni remains low despite moderate awareness. Knowledge gaps, negative perceptions, and poor access hinder

uptake. Tailored community-based education, improved availability, and male partner engagement are critical for increasing utilization and reducing unintended pregnancies and HIV infections.

LIMITATIONS OF THIS STUDY

This study's cross-sectional design limits causal interpretation, and its focus on young women in Kisauni reduces generalizability to other age groups or regions. Self-reported data may be affected by recall or social desirability bias, and focus group responses may have been influenced by group dynamics. Selection bias is also possible due to household-based sampling. Additionally, the exclusion of male partners limits understanding of partner-related influences on female condom use.

RECOMMENDATIONS

A comprehensive approach is needed to increase female condom utilization among young women. This includes implementing targeted health education campaigns that emphasize correct use, integrating female condom counseling into routine reproductive health services, and actively involving male partners in awareness initiatives to strengthen support. Additionally, improving the supply chain and ensuring affordability within public health facilities will enhance accessibility. Finally, further research involving larger and more diverse populations is essential to better understand the cultural and socio-

economic factors influencing female condom uptake.

AUTHOR CONTRIBUTION TO THE MANUSCRIPT

Lordin Alumasa Wanjala led the study design, data collection and analysis, manuscript drafting, and project administration.

Keneth Ngure and Wallace Karuguti provided supervision, methodological guidance, validation, resource support, and manuscript review.

Janerittah Muthoni contributed to manuscript review and clinical input.

CONFLICT OF INTEREST

The authors declares no conflict of interest related to this work.

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