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HEALTHCARE SYSTEM FACTORS INFLUENCING MODERN CONTRACEPTIVE UTILIZATION AMONG WOMEN OF THE REPRODUCTIVE AGE IN TURKANA COUNTY, KENYA

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ABSTRACT

Background: Modern contraception is essential for women's health, offering diverse methods tailored to individual needs. Globally, 1.1 billion women require family planning, but 172 million face unmet contraceptive needs, especially in developing nations. In Kenya, despite progress, Turkana County lags by 26.3% in contraceptive utilization, facing sociocultural challenges. This research targets healthcare factors affecting contraceptive utilization, addressing Turkana's unique issues. **Methodology:** A descriptive cross-sectional design was utilized, with 360 participants chosen through systematic random sampling from registered households. SPSS 21.0 facilitated analysis, revealing correlations through frequencies, proportions, and Chi-Square tests. Results were visually presented. **Results**: The study revealed a modern contraceptive utilization rate of 53%. Healthcare system factors significantly impact modern contraceptive utilization, including distance to health facilities ($p < 0.000$), availability of family planning services ($p < 0.000$), positive healthcare worker attitudes ($p < 0.000$), sufficient health providers ($p < 0.000$), and expected service time ($p = 0.003$). **Conclusion and Recommendations:** The study underscores the pivotal role of healthcare system factors in Turkana's contraceptive utilization. Accessible, positive healthcare experiences significantly impact utilization. To address disparities, Turkana County need to prioritize healthcare investment, extending family planning to remote areas through mobile clinics or outreach programs, training positive healthcare workers, and ensuring timely, fostering enhanced reproductive health outcomes.

KEYWORDS: Modern Contraceptive, Contraceptive utilization, Healthcare system factors, Reproductive age, Turkana County.

INTRODUCTION

Modern contraception is crucial for women's health and integral to reproductive well-being. While natural fertilization can occur at any time during the fertile period, preventing unwanted pregnancies is essential in certain circumstances. Various methods, such as barrier methods, hormonal methods, intrauterine devices, and sterilizations, cater to women's diverse needs based on health, lifestyle, and interpersonal factors.[1]

Globally, 1.1 billion women require family planning, with 172 million facing unmet contraceptive needs. Disparities persist, especially in developing nations, influenced by factors like partner support, peer pressure, and limited access to services.[1,2,3,4,5]

In Kenya, despite positive trends, unintended pregnancies contribute to high maternal and perinatal mortality. Inequities exist, with Turkana County lagging behind by 26.3% in modern contraceptive utilization.

Sociocultural norms, side effects, and health concerns contribute to slow progress in counties with sub-optimal use.[6] Kenya's population growth poses economic challenges, with 37% of pregnancies unplanned, leading to unsafe abortions and maternal mortality. The unmet need for contraception is evident, with Turkana County facing a 15.6% unmet need. Poor reproductive health indicators, including a high total fertility rate and low contraceptive prevalence rate, make Turkana County a pertinent case study.[6,7] This research focuses on healthcare system factors influencing modern contraceptive utilization in Turkana County, aiming to address specific issues contributing to sub-optimal utilization.

MATERIALS AND METHODS

Study design: This study employed a descriptive cross-sectional approach to investigate modern contraceptive utilization among Women of Reproductive Age (WRA) in Turkana County. A descriptive cross-sectional study design was chosen to capture a snapshot of contraceptive utilization at a single point in time.

Setting: The study was conducted in Turkana County, which was chosen at random from among the five counties (Turkana, Mandera, Wajir, Marsabit, and Samburu counties) that have high rates of unplanned pregnancies and low contraceptive prevalence[6]. The study focused on a population that had resided in Turkana for at least nine months to ensure adequate exposure to the local context and health services.

Participants and sampling technique: The study population consisted of women of reproductive age (15 to 49 years) who had been residents of Turkana County for a minimum of nine months. Participants were chosen using systematic random sampling from registered households that met specific inclusion and exclusion criteria. Women within the specified age range were eligible to participate by providing voluntary written consent and being available for an interview. Individuals who refused to provide written consent or were unavailable for interviews during the study period were excluded.

Inclusion and Exclusion Criteria: The inclusion criteria encompassed women of reproductive age, specifically those aged between 15 and 49 years, who consented to participate. Eligible women needed to communicate independently and respond to questions without assistance, except for translation or reading support. Additionally, they were required to have been residents of Turkana for at least nine months. The exclusion criteria excluded individuals who were unwilling to participate, seriously ill, pregnant, or had sick children.

Variables: The main outcome variable of interest was the healthcare system factors influencing modern contraceptive utilization among women of reproductive age in Turkana County, Kenya.

Data Sources/Measurement: Data were collected using a structured questionnaire administered to the participants by trained research assistants. The questionnaire was translated into Kiswahili and designed to capture detailed information on contraceptive utilization (yes or no), healthcare characteristics such as accessibility, availability, and affordability of modern contraceptives, health workers' attitudes towards WRA on modern contraceptive utilization, and sources of information. The reliability and validity of the questionnaire were ensured through pre-testing and subsequent adjustments. Individual interviews were conducted with women who met the inclusion criteria but were unable to read or write to provide the information.

Bias: To address potential sources of bias, systematic random sampling was employed to select participants from registered households who met specific inclusion and exclusion criteria, thereby minimizing selection bias. Additionally, efforts were made to protect the privacy and confidentiality of participants' responses in order to reduce reporting bias.

Study Size: The sample size was determined using Fisher's formula[8], based on a contraceptive prevalence rate of 30.7% as reported in the KDHS 2022[6] resulting in a target sample size of 360 participants.

$$n_0 = \frac{z^2(pq)}{e^2}$$

The sample size was calculated using a 95% confidence level and a normal deviation (Z) of 1.96. Turkana had a 30.7% uptake of modern contraception (P = 0.37), with the proportion of people who did not use it serving as a measure of variability (Q=1-P). The allowable error range (E) was set to 5% (0.05). Applying these values to the formula yielded an initial estimated sample size of 327 participants. To account for potential non-response and incomplete surveys, the sample size was increased by 10%, resulting in a total of 360 participants.

Quantitative variables: Quantitative variables included participants' healthcare system factors such as accessibility, availability, affordability of modern contraceptives, health workers' attitude towards WRA on modern contraceptive uptake, and sources of information. Frequencies and proportions were used to summarize the healthcare factors.

Statistical Methods: Statistical analysis was performed using IBM SPSS version 21.0. Descriptive statistics were used to summarize the data, while inferential analysis was conducted using Chi-square tests to assess associations between variables, with a significance level set at $p < 0.05$ and a 95% confidence interval. The analysis accounted for the sampling strategy, and any

missing data were addressed through appropriate statistical techniques. Sensitivity analyses were conducted to ensure the robustness of the findings.

Ethical Consideration: Ethical approval for the study was granted by the Kenyatta National Hospital-University of Nairobi Ethics and Research Committee (KNH-UoN ERC) under reference number UP387/04/2023. Additionally, authorization was secured from the National Commission for Science, Technology, and Innovation (NACOSTI) with license number NACOSTI/P/23/27693. Permissions were also obtained from the County Commissioner of Turkana County and local authorities before commencing data collection. Written informed consent was obtained from all participants, and their confidentiality was preserved throughout the study.

RESULTS

Distribution of Healthcare System Factors

The aim of the study was to illustrate how respondents were distributed in terms of healthcare considerations. The findings indicate that the majority of people, 109 (30.3%), lived 5 to 10 kilometers from healthcare centers, followed by 96 (26.7%) participants who lived 2 to 4 kilometers away. Regarding family planning services, 307 (85.3%) participants stated that they were available, while 36 (10%) participants couldn't determine their availability. Regarding affordability, 285 (79.2%) participants acknowledged that they can afford, followed by 24 (6.7%) participants who reported that they could not afford them. Generally, people felt that healthcare workers had a good attitude, with 195 (54.2%) participants, followed by 145 (40.3%) participants who stated they were fair. Health providers were the primary source of family planning information for 208 (57.8%) participants, followed by community health workers, with 90 (25%). About 241 (65.1%) participants expected services to take less than an hour, while 98 (27.2%) participants expected it to take 1-2 hours. Finally, 223 (61.9%) participants believed there were enough healthcare providers, followed by 77 (21.4%) participants who indicated there were not enough. The results are presented in table 1 below.

Table 1: Participants' Healthcare System Factor (n=360).

Variables	Respondents	Frequency (n=360)	Percent (%=100)
Distance to Health Facility	1 km and below	85	23.6
	2 – 4 km	96	26.7
	5– 10 km	109	30.3
	10 km and above	70	19.4
Availability of Family Planning Services	Yes	307	85.3
	No	17	4.7
	Can't tell	36	10.0
Affordability of Services	Yes	285	79.2
	No	24	6.7
Health Worker Attitude	Poor	20	5.6
	Fair	145	40.3
	Good	195	54.2
Source of Family Planning Information	Community health workers	90	25.0
	Health providers	208	57.8
	Religion leaders	2	.6
	Media	28	7.8
	Friends and relatives	32	8.9
Expected Service Time	≤1 Hr.	237	65.8
	1-2 Hrs.	98	27.2
	>2Hrs	25	6.9
Sufficiency of Health Providers	Yes	223	61.9
	No	77	21.4
	Cannot tell	60	16.7

Association between healthcare system factors and utilization of modern contraceptives

The study investigated the impact of various healthcare system factors on the utilization of modern contraceptives. Findings revealed that participants residing within 1 kilometer of healthcare facilities demonstrated the highest utilization of modern contraceptives, with 60 (31.6%) participants, followed by 56 (29.5%) participants residing within 2-4 kilometers from the hospital facilities. The distance to healthcare facilities significantly influenced contraceptive utilization ($p < 0.000$). Moreover, participants overwhelmingly chose contraceptives when family planning services were available, with 181 (95.3%) participants utilizing these services, while only 7 (3.7%) participants did so when services were unavailable. The association was strongly significant between the availability and the utilization of modern contraceptives ($p < 0.000$). Services were perceived as affordable by 171 (90%) participants, but the affordability of services

did not demonstrate a significant association with the utilization of contraceptives (p = 0.176). Participants demonstrated a preference for contraceptive utilization when healthcare workers exhibited positive attitudes, with 123 (64.7%) individuals choosing contraceptives in such instances. This was followed by 60 (31.6%) participants when attitudes were perceived as fair. The observed connection between positive attitudes of healthcare workers and contraceptive utilization was found to be highly significant (p < 0.000). Participants primarily utilized healthcare providers as their source of family planning information, with 117 (61.6%) participants, followed by community health workers, with 46 (24.2%). However, the source of information about family planning was not significantly associated with utilization (p = 0.119). The majority of participants (73.7%) opted for contraceptives when service time was one hour or less, and this relationship was statistically significant (p = 0.003). Finally, the sufficiency of healthcare providers strongly influenced utilization (p < 0.000), with 153 individuals choosing contraceptives when providers were adequate, compared to only 26 when they were insufficient. The results are presented in table 2 below.

Table 2: Association between healthcare system factors and utilization of modern contraceptives (n=360).

Variables Characteristics		Utilization of modern Contraceptive		Chi-Value Df P-value
		Yes (n=190, 52.8%)	No (n=170, 47.2%)	
Distance to Health Facility	1 km and below	60 (31.6%)	25 (14.7%)	$\chi2=22.215^a$ df=3 p=0.000
	2 – 4 km	56 (29.5%)	40 (23.5%)	
	5– 10 km	48 (25.3%)	61 (35.9%)	
	10 km and above	26 (13.7%)	44 (25.9%)	
Availability of Family Planning Services	Yes	181 (95.3%)	126 (74.1%)	$\chi2=37.833^a$ df=2 p=0.000
	No	7 (3.7%)	10 (5.9%)	
	Can't tell	2 (1.1%)	34 (20%)	
Affordability of Services	Yes	171 (90%)	114 (67.1%)	$\chi2=1.835^a$ Df=1 P=0.176
	No	11 (5.8%)	13 (7.6%)	
Health Worker Attitude	Poor	7 (3.7%)	13 (7.6%)	$\chi2=18.394^a$ df=2 p=0.000
	Fair	60 (31.6%)	85 (50%)	
	Good	123 (64.7%)	72 (42.4%)	
Source of Family Planning Information	Community health workers	46 (24.2%)	44 (25.9%)	$\chi2=7.331^a$ df=4 p=0.119
	Health providers	117 (61.6%)	91 (53.5%)	
	Religion leaders	2 (1.1%)	0	
	Media	14 (7.4%)	14 (8.2%)	
	Friends and relatives	11 (5.8%)	21 (12.4%)	
Expected Service Time	<1 Hr.	140 (73.7%)	97 (57.1%)	$\chi2=11.705^a$ df=2 p=0.003
	1-2 Hrs.	38 (20%)	60 (35.3%)	
	>2Hrs	12 (6.3%)	13 (7.6%)	
Sufficiency of Health Providers	Yes	153 (80.5%)	70 (41.2%)	$\chi2=62.157^a$ df=2 p=0.000
	No	26 (13.6%)	51 (30%)	
	Cannot tell	11 (5.8%)	49 (28.8%)	

Modern contraceptive utilization

The results indicated that 53% (190) of the respondents were currently utilizing modern contraceptive methods (Figure 1).

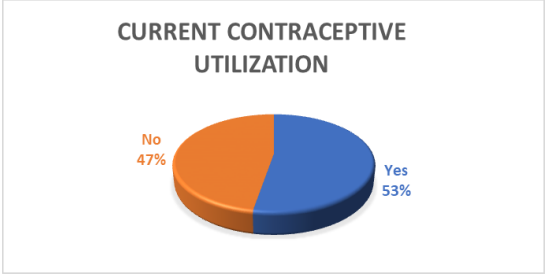

Figure 1: Current contraceptive utilization (n=360).

DISCUSSION

Healthcare System Factors

The study investigated various factors influencing modern contraceptive utilization among respondents, providing insights into their perceptions and experiences related to healthcare accessibility, affordability, healthcare worker attitudes, information sources, service length expectations, and perceived sufficiency of healthcare providers. The majority of respondents reported residing within 5 to 10 kilometers of healthcare facilities, indicating convenient access for a substantial number, while others lived within 2 to 4 kilometers, suggesting a moderately manageable distance. This favorable situation aligns with a study conducted on reducing the unmet need for contraceptive services

among youth[9], emphasizing the importance of geographical proximity for healthcare access.

Concerning the availability and affordability of modern contraceptive services, a significant majority of respondents reported both ready availability and affordability. More than half of the participants indicated that they could afford these services, reflecting accessible and affordable modern contraceptives, supporting reproductive health choices consistent with the study conducted on healthcare system indicators associated with modern contraceptive utilization.[10] This positive scenario contributes to informed decision-making and promotes better reproductive health outcomes within the surveyed population.

In terms of healthcare worker attitudes, the study revealed that more than half of the respondents held positive perceptions of healthcare workers' attitudes. This positive outlook underscores the crucial role of positive attitudes among healthcare professionals in creating a supportive environment for individuals seeking healthcare services, including modern contraceptive utilization. It contrasts with a study conducted in South Africa which emphasizing the impact of positive attitudes on enhancing overall quality of care and promoting better health outcomes.[11]

The study highlighted healthcare providers as the predominant source of information on modern contraceptive utilization, with more than half of the respondents relying on them. This underscores the influential role of healthcare professionals in shaping individuals' knowledge and decision-making processes regarding modern contraceptives. The findings emphasize the importance of healthcare professionals not only in delivering services but also in providing guidance and education on reproductive health, aligning with findings of study conducted in Kenya.[12]

In terms of service length expectations, most respondents anticipated that healthcare services would last less than an hour. This expectation of relatively short service durations is crucial for efficient healthcare service delivery, particularly for modern contraceptive services where ssssstimely access is essential. This underscores the significance of maintaining efficient healthcare delivery systems to meet the preferences and needs of the surveyed population, supporting better reproductive health outcomes, consistent with the study's findings conducted in Rawalpindi.[13]

Regarding the perceived sufficiency of healthcare providers, a sizable majority of respondents believed that there were sufficient healthcare providers in their area. This perception of ample healthcare staff can instill trust and confidence in the healthcare system, encouraging individuals to seek and use healthcare services, including modern contraceptives. This positive perception aligns with the study conducted on the influence of racial-ethnic discrimination on women's health care outcomes which, emphasizing the role of favorable perceptions in enhancing healthcare-seeking behavior and overall community well-being.[14]

CONCLUSION

The study underscores the critical role of healthcare system factors in shaping modern contraceptive utilization in Turkana County. Accessible and positive healthcare experiences significantly influence utilization. Understanding these dynamics is pivotal for targeted interventions to address disparities and enhance reproductive health outcomes.

RECOMMENDATIONS

Turkana county governments needs to consider in prioritizing healthcare investment, extending family planning services to remote pastoralist areas through mobile clinics or outreach programs. Training healthcare workers is crucial, emphasizing a positive demeanor, as attitudes significantly impact contraceptive decisions. Prioritizing reduced waiting times and an ample provider workforce will further boost contraceptive uptake.

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DECLARATIONS

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***Ethical approval**: The study was approved by the Scientific Ethics and Review Committee (SERC) of the University of Nairobi/Kenyatta National Hospital (KNH)* number UP387/04/2023., *and also, by the National Commission for Science, Technology, and Innovation (NACOSTI*) license No. NACOSTI/P/23/27693.

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