"Preferred contraceptive method access in public facilities in Western Kenya: A mixed-methods analysis of reasons for preferred method denial using mystery client data."

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Abstract (269/300 words).

Introduction: Unmet need, a common family planning programmatic indicator, assumes all contraceptive users have their needs met and contraceptive use is the goal for all women who are sexually active and do not desire a pregnancy within two years. These assumptions neglect individuals who desire contraceptive non-use regardless of fertility intentions and users of non-preferred contraceptive methods. Previous research has shown that inappropriate medical contraindications (IMCs) may contribute to non-preferred method use, but IMCs are difficult to measure. Other potential causes of preferred method denial, which can lead to non-preferred method use, include structural factors and provider bias.

Methods: This mixed-methods study uses quantitative and qualitative data from mystery clients posing as family planning clients in public-sector facilities in Kisumu County, Kenya to describe the frequency and nature of non-preferred method use, including understudied contributing factors such as IMCs, structural factors, and provider bias.

Results: Mystery clients were denied preferred methods in 69% of visits. In 48% of mystery client visits, no method was offered. Qualitative data shows structural factors, especially stockouts and lack of trained providers, often contributed to preferred method denial. Medical reasons, including pregnancy testing requirements and IMCs, often prevented mystery clients from accessing preferred methods. Provider bias was less common, and often centered around parity and infertility concerns.

Discussion: Preferred method denial is complex and can be attributed to a range of structural and interpersonal factors. While stockouts, lack of training, and provider bias have been previously

explored, we present new evidence that unnecessary medical reasons for denial impacted method provision. This illustrates a need for improved understanding of contraindication criteria, including pregnancy testing requirements.

Introduction

Contraceptive access is imperative to reproductive autonomy.[1–3] Given the centrality of contraception to human rights, many global family planning programs have pushed to end "unmet need" for contraception.[4] Yet, as other scholars have noted, unmet need is problematic in its assumptions that 1) all contraceptive users have their needs met, and 2) contraceptive use is the goal for all women who are of reproductive age, fecund, sexually active, and desire to avoid pregnancy for the next two years.[4–8] These assumptions overlook individuals who actively desire contraceptive non-use, regardless of their fertility intentions, and those who are using a method that the dislike or who would prefer to use a different method. Using the typical unmet need measure, individuals in the first group would be assigned unmet contraceptive need, and the those in the latter group would be seen as having their contraceptive needs fully met. This failure to center contraceptive autonomy has raised alarm about potential coercion in contraceptive service provision. As a result, emerging research seeks to improve measurement of alignment between contraceptive users' desires and actual use.[9–13] In this paper, we posit measurement of preferred method denial – and its consequences of non-preferred contraceptive use and undesired contraceptive non-use – are important parts of on-going efforts to better understand misalignment of contraceptive desire and actual use, thus advancing contraceptive access in the Global South.

Preferred method denial occurs when someone seeking a specific contraceptive method is unable to obtain that preferred method. This can result in contraceptive non-use, despite an on-going desire to use a method, or in non-preferred contraceptive use. Non-preferred contraceptive use is person-centered concept defined as use of a method other than the method someone would prefer to use.[14] Within the definition of traditional measures such as unmet need, these women would be grouped as 'users,' and considered to have all their needs met. This characterization misses a key need that is not fulfilled: preference. At the population level, non-preferred method use signals family planning programs may not be meeting the preferences of their patient population. At the individual level, it is a violation of contraceptive autonomy that can result in contraceptive dissatisfaction and unwanted discontinuation.[15,16] As such, more research is needed to understand why contraceptive seekers are denied preferred methods or all methods of contraception.

After arriving at a facility, there could be multiple reasons why a client would be denied a preferred method, including structural factors, provider bias, and medical reasons for denial. Structural factors are systemic issues that are deeply ingrained in institutions, their policies, or larger systems that are often outside of the control of individual providers. Across the Global South, many studies have identified structural issues as barriers to contraceptive access, including lack of contraceptive commodities and supplies needed to disperse methods, overwhelming patient loads, and provider absenteeism.[11,17,18] Provider bias has also been well documented as a reason for contraceptive refusal, with major initiatives such as the Beyond Bias Project created to specifically address provider biases on the basis of a client's age, marital status, and parity.[19] However, medical reasons for preferred method denial are relatively under-documented in the contraceptive access literature. Medical reasons is a broad, sometimes vague category of reasons for denial, and can include both facility regulations, like mandating pregnancy tests instead of using a pregnancy checklist, or individual provider decisions about who is eligible to receive contraception based on contraindication criteria.[20] Medical reasons for denial must also be separated into those that are medical necessary and in the best interest of the patient, and those that are not evidence-based and therefore inappropriately restrict contraceptive

choice.

Our prior research found women in an anonymized African country were unable to obtain their preferred contraceptive method due to medical reasons, including a sub-category of medical reasons called inappropriate medical contraindications (IMCs), which occur when a provider withholds a desired method based on an outdated or incorrect medical rationale.[20–22] In this prior study, 37% of family planning users reported non-preferred method use.[21] Among those using a non-preferred method, 55% reported a provider told them there was a "medical reason" why they could not be given their preferred method.[21] In the rich qualitative data, many of the women reporting non-preferred method use due to medical reasons were not given an evidence-based medical rationale for why they could not use their preferred method. These mixed-methods results suggested providers were applying contraindication criteria incorrectly, or misleading clients about their medical eligibility for preferred methods.[21]

Therefore, the role of IMCs as a potential contributor to preferred method denial merits consideration. IMCs include medically unnecessary testing before provision of contraception, the use of outdated or non-evidence based contraindication criteria to deny or encourage use of specific methods, and the use of non-evidence based medical rationales to deny removal services of provider-restricted methods.[20,22,23] We currently have little information on how frequently providers apply IMCs, and the extent to which IMC application results in preferred method denial. There is a significant literature gap in documenting the prevalence of IMCs and their impact on contraceptive method denial in the Global South.[24,25] While somewhat more recent studies have examined provider knowledge (or lack of knowledge) of appropriate medical contraindications, these studies have not attempted to estimate the impact of this lack of knowledge on women's contraceptive access or the frequency of inappropriate medical denials.[26–29]

One challenge in assessing the role of IMCs in the outcomes of non-preferred method use and undesired contraceptive non-use is that IMCs are difficult to measure with traditional survey instruments. Interviews with women in their homes or as they are exiting facilities are unlikely to yield accurate data on IMCs as clients are often unaware that the medical reasons for method denial offered by providers are inaccurate. And, in interviews or observations, providers may hide IMC application due to social desirability bias. Finally, since the role of the provider is to use evidence-based knowledge of medical contraindications to support patients in choosing and safely using a contraceptive method, it can be challenging to separate *appropriate* medical contraindications that are in the best interest of the patient from *inappropriate* medical contraindications that threaten patient choice, and, in some cases, patient safety.[21] Because of this difficulty, to our knowledge, no data collection tools attempt to measure if IMCs were applied, or if medical reasons were a barrier to obtaining methods. Most client exit interviews, for example, may record if a patient says she was not eligible for her preferred method, but with no details about *why* the patient was ineligible.

Therefore, there is a need to apply novel methods of data collection to the issue of preferred method denial, especially around the issue of IMCs. One such approach is the mystery client methodology, in which trained data collectors visit healthcare facilities under the guise of seeking services. The mystery client methodology can address the limitations of other data sources that have prevented direct investigation of IMCs. In our mystery client visits, a trained data collector used a standardized medical history without contraindications to contraception to seek a family planning consultation, and subsequently recorded pre-specified details about the clinical encounter.[30] While collecting data on IMCs, these mystery client visits could also

document the other reasons for preferred method denial faced by contraceptive seekers, including structural issues and provider bias. The objective of this paper is to use this novel approach – mystery client observations – to measure medical, structural, and provider-bias related reasons for denial of preferred methods at public sector facilities in Kisumu County, Kenya. Specifically, we aim to capture IMC application by providers, a significant improvement on prior research into medical barriers to contraceptive use, and to take advantage of the unique mystery client methodology to determine if any sociodemographic characteristics are associated with preferred method denial.

Methods

This analysis leverages baseline data from an NIH-funded parent study. This NICHD-funded cluster randomized controlled trial (R01HD101453-01) was designed to examine the impact of social accountability interventions on contraceptive access in Western Kenya. Data collection and analysis protocols were approved by the Institutional Review Board of the University of North Carolina Chapel Hill (359624, 423270) and the Maseno University Ethics Review Committee in Kenya (105422). The present study uses only pre-intervention data.

Study Design.

While the parent study collected multiple forms of individual and facility-level data, this analysis uses pre-intervention mystery client observations in a census of public-sector healthcare facilities in Kisumu County, Kenya. Mystery clients were hired from a pool of experienced enumerators after being matched to specific demographic profiles and passing a memorization test. Through the week-long training process, mystery clients were carefully trained to answer questions about their medical history and why they desired a contraceptive method. The training team included multiple authors (SC, KT, DO) with expertise in mystery client methodology and the Kenyan medical system. Mystery clients were trained to memorize specific details about the visit and to end the visit just before obtaining the family planning method with a pre-scripted "change of heart;" this was done to ensure no mystery client was subjected to medical exams or method administration. Mystery clients were specifically instructed to refuse all medical testing, including tests for HIV, pregnancy, and COVID-19. Sixteen enumerators were trained and assessed on their ability to accurately memorize visit details, and the twelve most accurate mystery clients were hired. Each mystery client was assigned a preferred method (oral contraceptive pill, implant, copper IUD or injectable) and a backup method to ask for if denied their preferred method.

Mystery clients visited one public facility per day, Monday-Friday, arriving five to ten minutes before the facilities officially opened at 8 AM. Within 30 minutes of leaving the facility, the mystery clients completed an electronic questionnaire, using a password-protected encrypted Android tablet. On the questionnaire, mystery client reported if they had been offered their preferred method, if the provider had refused their preferred method and offered an alternative, if the provider refused to give them a method at all, and reasons for method denial. Other details of the visit, including all medical history taken, were recorded in both 'select all' questions and in open-ended comment boxes, where mystery clients provided a detailed narrative of their visit.

Each of the 137 public facilities in Kisumu County received a visit from three different mystery clients, for a total sample of 411 mystery client visits. Ten observations had missing data for the majority of the questionnaire because the facility remained closed for the entire day of the visit. This resulted in 401 completed mystery client observations for quantitative data analysis,

and 720 corresponding long-form comments for qualitative data analysis. Data were collected between May-July 2022.

Measures

We hired mystery clients with specific demographic profiles, with various configurations of married and unmarried, nulliparous and parous, above and below 30 years old, and above or below 80kg (Table 1). We examine several outcomes: whether the mystery client was 1) offered a preferred method, 2) offered any other contraceptive method, including condoms, but denied a preferred method, and 3) denied all methods, along with reasons for preferred and all method denial. Outcomes 2 and 3 would be considered preferred method denial – where the provider does not offer the specific method the mystery client requested – and outcome 3 would be considered all method denial, where the mystery client would be expected to leave with no options for pregnancy prevention. We included being offered condoms as outcome 2, being offered a non-preferred method.

We used the long-form comments to categorize reasons for denial as medical (required a pregnancy test before giving method, denial due to IMC application), structural (e.g., method stockout, provider not trained in insertion), or bias-related (denial due to the client's parity, marital status, or age) (**Appendix A**). While provider bias is typically defined as when a provider refuses to offer a method due to their own beliefs about who should or should not be using contraception, often on the basis of age, marital status, or parity, mystery clients were only able to identify a bias-related refusal if a provider explicitly denied them a method and stated it was due to one of these characteristics.

Table 1: Characteristics of 12 Mystery Clients and 401 Mystery Client Visits

Characteristics	Mystery Client Profiles		Completed Mystery Client Visits	
	N=12	%	N=401	%
Age				
Below 30	4	33%	156	39%
30 and above	8	67%	245	61%
Marital Status				
Married	7	58%	220	55%
Single	5	42%	181	45%
Weight				
Over 80 kg	5	42%	165	41%
Under 80 kg	7	58%	236	59%
Parity				
Nulliparous	4	33%	153	38%
1 or more children	8	67%	248	62%
Assigned 'Preferred' Method				
Daily Pill	3	25%	108	27%
Injectable	3	25%	114	28%
Intrauterine Device	4	33%	109	27%
Implant	2	17%	70	17%

Other details of the visit reported by the mystery clients included the type of facility, cadre of provider providing most of the counseling session, sex of provider, whether providers took the client's weight, whether providers took blood pressure, and other details about the visit. Long form comments were solicited if mystery clients selected "other" to any questions. Additionally, at the end of the survey, mystery clients answered the following questions with long form comments: *What else can you share about your interaction with your provider today? For example, what did the provider/facility/staff do well and what did they not do well?*

Data Analysis

Quantitative analysis

We calculated the frequency of preferred and all method denial across mystery client visits. We also calculated how many mystery clients were referred to a different facility if they were not offered a preferred method. We then did a chi-squared test to examine bivariate associations between mystery client characteristics and being offered a preferred method, offered a non-preferred method, and denied all methods.

Qualitative Analysis

To contextualize these findings, we completed a deductive thematic analysis of the 720 long-form comments from the mystery clients, using the qualitative research software Dedoose.[31–33] The qualitative analysis explored how mystery clients described requesting a specific method, how providers take medical histories, reasons providers give for preferred

method or all method denial, and circumstances around IMC application. Mystery client comments were read by three study team members and compared to the quantitative survey responses as data were collected daily. After reading through all the qualitative data, one study team member created a deductive codebook focused on the visit outcome, details of the visit including time spent with the provider and medical history taken, medical information given about contraceptive methods, structural factors that were impacting the visit (including commodity stock outs and provider availability), and experience of provider bias. For visits where a mystery client was denied a preferred method or all methods, reasons for denial were coded as medical reasons, structural reasons, or provider bias-related reasons. For visits where multiple reasons could be selected, the study team met to discuss and identify a primary reason for denial.

Triangulation

Finally, we used an iterative triangulation process to return to the quantitative data based on insights from the qualitative analysis for an integrated mixed-methods approach. First, we used descriptive statistics to explore differences in reason for preferred method denial by method type. Then, we used the qualitative data to illustrate and better understand nuances in reasons for preferred and all method denial by method preference.

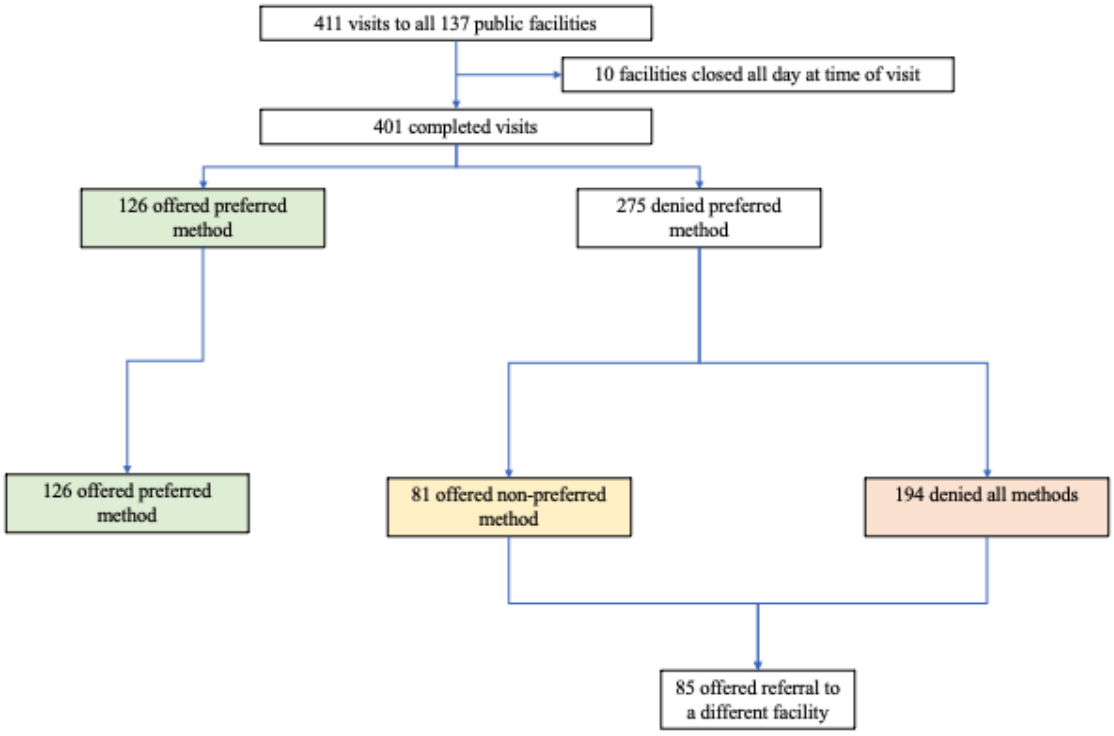
Results

Mystery clients were offered their preferred method in 31% of visits (n=126; Table 2). In one out of every five mystery client visits, providers offered a non-preferred method. In nearly half (48%) of mystery client visits providers did not offer any method of contraception, including condoms. Some mystery clients received more than one referral (one for a preferred method and one for any method); but overall, 85 mystery clients who were not offered their preferred method received a referral to a different facility (Figure 1).

Table 2: Service delivery outcomes from 401 mystery client visits seeking family planning services in Kisumu, Kenya

Outcome	N	%
Visit Outcome	**N=401**	
Offered preferred method	126	31%
Offered non-preferred method	81	20%
Denied all methods	194	48%

Figure 1. Flowchart of outcomes of 411 mystery client attempted visits at public facilities in Kisumu, Kenya.



Associations between Mystery Client Characteristics and Preferred Method Denial

We conducted chi-squared tests to compares women who were offered their preferred contraceptive method, offered a non-preferred method, or denied a method entirely, across four client characteristics: marital status, parity, weight, and preferred method (Table 4). Approximately equal proportions of married and unmarried women were offered their preferred method or a non-preferred method, while a higher proportion of married women were denied any method, compared to unmarried women – although these results are not statistically significant. Parity was strongly associated with our outcomes of interest. Mystery clients with children were more likely to be offered a preferred method and more likely to be denied all methods, compared to mystery clients without children. but there appeared to be little difference in parity among those offered non-preferred methods (p=0.001). While weight demonstrated statistically significant association with our outcomes, the direction of the relationship was not what was hypothesized: those under 80kg were more likely to be offered a non-preferred method or denied all methods (P=0.015). Finally, preferred method was strongly associated with our outcomes. Pill users were more likely to be offered their preferred method, and IUCD users were more likely to be denied all methods or offered a non-preferred method (p<0.001).

Table 4. Associations between mystery client characteristics and visit outcome in 401 visits to public facilities in Kisumu, Kenya.

Variable	Offered Preferred Method (n=126) N, %	Offered Non-Preferred Method (n=81) N, %	Denied All Methods (n=194) N, %
Marital Status			
No	63, 50%	41, 51%	77, 40%
Yes	63, 50%	40, 49%	117, 60%
Parity			
No	33, 26%***	42, 52%***	78, 40%***
Yes	93, 74%***	39, 48%***	116, 60%***
Weight			
Under 80 kg	61, 48%*	50, 62%*	125, 64%*
Over 80 kg	65, 52%*	31, 38%*	69, 36%*
Preferred Method			
Pill	51, 40%***	19, 23%***	38, 20%***
Injectable	36, 29%***	22, 27%***	56, 29%***
IUCD	16, 13%***	25, 31%***	68, 35%***
Implant	23, 18%***	15, 19%***	32, 17%***

* Chi-square test significant at $p<0.05$
** Chi-square test significant at $p<0.01$
*** Chi-square test significant at $p<0.001$

Qualitative Description of Reasons for Method Denial

In visits where providers offered mystery clients their preferred method (n=126), only 5% of mystery clients (n=6) faced resistance, such as pressure to choose a different method or not use contraceptives all together, from providers (Table 5). Of the visits in which providers denied mystery clients all methods (n=194), 54% of these visits results in denial of all methods due to a structural reason (n=105), 43% were due to an invalid medical reason (n=84), and 3% were due to provider bias (n=5). In the cases where providers offered mystery clients a method other than their preferred method (n=81), 69% (n=56) did not offer the preferred method due to a structural reason, 17% (n=14) did not offer the preferred method due to provider bias, and 14% (n=11) refused to offer the preferred method due to an invalid medical reason.

Table 5: Reasons for method denial from qualitative analysis of long-form comments in 401 mystery client observations

Outcome	N	%
Offered preferred method	**N=126**	
No resistance from provider	119	94%
Some resistance from provider	6	5%
Offered non-preferred method	**N=81**	
Denied preferred method for medical reason	11	14%
Denied preferred method for structural reason	56	69%
Denied preferred method for bias-related reason	14	17%
Denied all methods	**N=194**	
Denied all method for medical reason	84	43%
Denied all method for structural reason	105	54%
Denied all method for bias-related reason	5	3%

The qualitative long-form comments offer more details about these experiences of denial based on medical, structural, or provider-bias related reasons:

Medical Reasons

Under medical reasons for preferred method denial, mystery clients experienced the application of inappropriate medical contraindications. Other medical reasons for denial included being required to take pregnancy tests or show proof of menstruation to screen for pregnancy, or being subjected to "stacked" screenings, when contraceptive care is only offered if patients agree to other services, like HIV testing or COVID vaccination.

Inappropriate Medical Contraindications

"My preferred method was available and free, but I wasn't offered it. The provider preferred I use the IUCD [copper IUD] because it doesn't change hormones. She mentioned that if I use pills, it will make me add more weight and she already saw my weight is too much." – ***MC2, married, has children, over 80 kg. Preferred method: Pills.***

In this quote, a provider denies a mystery client her preferred method, pills, in favor of a non-hormonal method because of the provider's concerns around weight gain. Weight is not a contraindication for the oral contraceptive pill, and while high blood pressure may prompt further evaluation from a provider, this mystery client's blood pressure was never taken.[34] Mystery clients of larger body sizes also faced mistreatment from providers about their weight, and were often redirected to non-hormonal methods. This mystery client wanted the pill, which was safe for her to use and in stock, but was redirected toward a method the facility was not equipped to administer:

After my provider took my weight and blood pressure, he started laughing and said there was a big problem. He kept repeating that I'm overweight and seemed very shocked. He kept laughing at the mention of my weight the whole time... My provider offered me the IUCD but stated that

they do not stock it and that I should book an appointment for a later date, [so he would have time to] go and bring this method from a different facility and also bring a speculum, since they did not have their own speculum at the facility. – ***MC7, unmarried, no children, weight over 80kg. Preferred method: Pills.***

Pregnancy Testing Requirements

Another significant medical reason for denial observed by mystery clients was providers requiring a pregnancy test or proof of menses. While pregnancy is a legitimate contraindication for use of contraceptive methods, there are multiple ways a provider can assess if a patient is pregnant, including pregnancy test or, if they are unavailable or a client declines testing, use of an approved checklist that asks a series of questions to ascertain if a client may or may not be pregnant.[34] However, some providers refused to use a pregnancy checklist, which created an unnecessary medical barrier to accessing contraception:

"The medical student at the family planning room stated three conditions to get family planning which were; I must be on my menses to confirm that am not pregnant. I must have a baby that is six months old. I must have used family planning before." – ***MC6, married, has children, over 80kg. Preferred method: IUCD.***

Overall, providers used medical reasons more often when refusing to offer mystery clients any method (accounting for 43% of reasons for refusing to offer all methods) rather than when diverting them from a preferred method to a non-preferred method (14% of reasons for offering a non-preferred method instead of a preferred method). This was in large part due to providers refusing to offer any methods – even barrier methods, like condoms – if mystery clients did not want to take a pregnancy test. Multiple clients were told that the family planning providers would not talk to them at all or provide any counseling on family planning methods unless they first took a pregnancy test. Sometimes, pregnancy test kits were stocked out, and mystery clients were automatically turned away if they were unwilling to show proof of menstruation. For example, while this mystery client's response to the first question on the pregnancy checklist[34] should indicate the provider could be reasonably sure she was not pregnant, the provider refused to believe her, and denied her preferred method, even though that method was in stock:

"I told her I'm a first timer, she then proceeded to ask me the last time I saw my menses. I told her [date within 7 days]. She then said that that [it] will be a little bit difficult to help because she can't be sure about the last time I saw my menses. She told me that we'll require [taking] a pregnancy test which might also not be possible by that time because they have run short of testing kits... She then asked me which method I wanted because currently they only have the injectables. I told her that that was what I wanted. ***– MC8, unmarried, has children, under 80kg. Preferred method: Injectable.***

Stacking of Other Services as a Requirement to Receive Contraceptive Services

In some cases, providers refused to offer contraceptive services, including counseling, if mystery clients did not agree to additional medical procedures, such as COVID-19 vaccines, HIV testing, or cervical cancer screening. For IUDs especially, some mystery clients were told that if

they did not agree to a cervical cancer screening, they would not be allowed to have an IUD placed. While these additional medical services should, like family planning, be voluntary, providers told clients that if they did not agree to these additional services, they would not be permitted to obtain their preferred method.

She [the provider] was friendly, she was knowledgeable about family planning and took time to explain to me as a first timer, even using a diagram [to explain IUD insertion], which was the [method] offered. On explaining the offering process, she mentioned that they screen for cancer as they insert it and that the two are [a] package and can't be separated, which I felt is a way to force cancer screening. – ***MC5, unmarried, no children, under 80kg. Preferred method: IUCD.***

Structural Reasons

Structural reasons for preferred method denial were common and were largely driven by stockouts of desired methods. Provider capacity and confidence in providing methods, especially implants and IUCDs, also restricted patient choice.

Method Stockouts

Stockouts were significant contributors to preferred method denial, often severely limiting the range of methods available at a facility. For example, this provider explained that due to stockouts, she only had an unpopular method to offer:

During our conversation, she added that they have been out of stock for most family planning methods since last year, except for the IUD which was available. She also said people don't like it. She told me she is not sure when the new stock will come, she told me if I was in pressing need I should take the IUD, which she was willing and ready to give. – ***MC10, unmarried, has children, weight over 80kg. Preferred method: Implant.***

When mystery clients were facing stock outs, they were often referred to other facilities or to private facilities. However, providers warned that the family planning commodities offered at private facilities may be expired:

She said that [the] injectable method is out of stock in almost all public hospitals in Kisumu County since the government did stop supplying them for some times now. She told me [if] I prefer to look for it in private health centers, I should check the expiry date first by myself before [accepting], because those drugs have been there for a long time now due to lack of customers in private hospitals. By the time those drugs were [available] in private health centers, people were visiting public health centers to get them, so now [private facilities] are offering [old injectables] because they have got the chance [since people cannot find them at public facilities], so most of them are expired. – ***MC4, married, no children, weight under 80kg. Preferred method: Injectable.***

Providers often utilized their professional and personal networks to try to obtain preferred family planning methods for mystery clients who were encountering structural barriers. These structural adaptations included negotiating with other facilities to request needed supplies

(commodity redistribution), suggesting that mystery clients purchase both commodity and non-commodity supplies from private vendors before returning for administration, asking mystery clients to return at later times or dates to allow the provider to physically travel to other facilities to get supplies, or making personalized referrals.

Provider Confidence and Willingness to Insert Methods

Not all providers felt they had the skills to offer methods that required procedures, namely implants and IUCDs. Many of the structural adaptations made for stockouts were also made by providers who felt comfortable admitting a lack of skill. For example, this mystery client was provided with a personal referral by a provider who felt uncomfortable inserting an IUD:

The provider was very kind…She was very frank with me and told me that it's been 5 years since she administered [an] IUCD and that she can't do it now, she has forgotten some concepts. She called another provider working in a neighboring facility and asked him if he could administer to me my preferred method. She then gave me her phone to talk to that provider so that we can agree when I should visit that other facility to get IUCD. – ***MC12, married, no children, weight under 80kgs. Preferred method: IUCD.***

In other visit, the provider denied the mystery client her preferred method (IUCD) due to a combination of structural factors; while the method was stocked out, if it had been present, the provider did not feel confident in her insertion skills. Instead, the client was referred to a different location for her preferred method – but the provider offered no other method to protect her from pregnancy in the meantime.

"The provider was brief. Asked me my preferred method, and when I responded with IUCD, she said it was not available because it is rarely asked for, they don't offer it. She did not mention any other method despite asking if I am a first-time family planning user. She referred me [District Hospital] citing it was available, and of course the efficiency of insertion is higher there since they are more professional…she has done it once in her case and cannot be so confident about it." – ***MC5, married, no children, under 80kg. Preferred method: IUCD.***

Other Structural Barriers: Cost and Provider Absenteeism

Mystery clients reported other factors that could impact other contraceptive seekers, including informal fees they were asked to pay for methods and lack of family planning providers at the facilities. While our mystery clients were instructed to ask about price and wait – sometimes for hours – until providers were available to offer methods, the following quote illustrates what other contraceptive seekers may face:

"The nurse was so brief. She asked which family planning I wanted, then she said injection has been out of stock for some time [and I could get a method] unless I take implant. When I asked about the price, she said the last time she checked injection was free, but for implant, it is done by a doctor who was not in and she doesn't know the price." – ***MC3, unmarried, has children, over 80kg. Preferred method: Injectable.***

Provider Bias

In contrast to the results of the chi-squared test, where the sociodemographic characteristics of the mystery clients had statistically significant effects on the likelihood of the visit outcomes, provider bias was relatively infrequently reported (compared to medical and structural barriers to preferred method use) by the mystery clients, occurring less than 20 times. For our mystery clients, provider bias-related reasons for denial often overlapped with medical reasons, especially if providers used infertility concerns to justify refusal based on age or parity. While they are presented here under provider bias related reasons, many of the stated reasons for refusal based on the mystery client's sociodemographic characteristics were given medical justifications, and so could also be considered inappropriate medical reasons for denial.

Parity Bias

"The provider was very knowledgeable about the service. He said it was the side effects which made him not offer me the service, that is, it leads to delayed fertility, and I don't have a kid yet. He handled me with care, he engaged me on the decision of not giving out the service in a polite way, and I was satisfied… He advised me not to start using family planning until I have a baby unless I have no plan of having babies." – ***MC4, married, no children, weight under 80kg. Preferred method: Injectable.***

This mystery client was explicitly denied the injectable due to the provider's concerns about infertility – but was then further admonished not to take any family planning methods until having children. The provider's manner was important to this mystery client, who reported feeling positive about the quality of care she received, involved in the decision not to use family planning, and looked after by the provider.

Age Bias

While age-related bias was often framed in risk of fertility, for IUD seekers, age was sometimes used as a proxy for risk of multiple sexual partners – even if the mystery client was married. Many of these providers referenced a common misconception that IUDs place women at increased risk of infertility or sexually transmitted infections.[34–37] Treating age or multiple sexual partners as a contraindication that prevents a provider from offering an IUD to patients could also be considered an IMC.

"The provider said that my preferred method, IUD, was not good for me since I was still young, and therefore still sexually active, and using an IUD would lead to infection." – ***MC12, married, no children, weight under 80kgs. Preferred method: IUCD.***

Providers' Method Preferences

Provider biases were less common around the mystery clients' sociodemographic characteristics but often came out around the mystery clients' method preference. For example, this mystery client recorded that she was offered her preferred method but noted that the provider's distrust of hormonal methods affected the quality of the counseling she received.

*She discouraged the method I wanted and recommended [that I use] another method. She told me that I can use two methods at the same time, e.g. condom and safe days. She said that if the patient insists on the method they want use even if the provider discouraged it, she will go ahead and give it out even if it's going to affect them the most. She knew more information but gave me less about all the methods she mentioned – **MC4, married, no children, weight under 80kg. Preferred method: Injectable.***

Other providers expressed strong preference for LARC usage, telling mystery clients that shorter term methods would be "phased out" soon or neglecting to give information on side effects for longer term methods. Again, this mystery client was offered her preferred method, but faced some resistance from the provider.

*The provider just mentioned the methods and told me that the pills were available, but she wouldn't wish [that] I take them since people tend to get pregnant while taking them. She encouraged me to have a longer method which was IUCD. Didn't mention the side effects she just said it's a good one for me. – **MC2, married, has children, over 80 kg. Preferred method: Pills.***

Triangulation

Based on the qualitative analysis and the results of the chi-squared test, we used descriptive statistics to further explore the quantitative mystery client data. Given the strong association between assigned preferred method and preferred method denial in the results of our chi-squared tests, we disaggregated reasons for preferred method or all method denial by method type (Table 6). For mystery clients seeking IUCDs, implants, and injectables, providers most often denied a preferred method for structural reasons (IUCD: 76%, implant: 93%, injectables: 77%), and rarely denied preferred methods due to medical or bias-related reasons. However, this pattern was different for mystery clients seeking pills: 42% were denied the pill due to a medical reason, and 26% were denied pills due to a bias related reason (Table 6). One mystery client assigned a preferred method of pills, explained why the providers at the facility would only offer her injectables:

*My session was conducted by two providers who seemed so professional. They took their time to explain to me about other methods offered at the facility, they even went further [to explain] why they would not offer me the other methods available at the facility [only] injectables… My providers stated that they would not offer me my preferred method (pills) because pills increase fertility and if I missed [taking] a pill even once then I would get pregnant immediately. – **MC7, unmarried, no children, weight over 80kg. Preferred method: Pills.***

Table 6: Reasons for method denial from qualitative analysis of long-form comments in 401 mystery client observations, by method type

Outcome	IUCD		Implant		Injectables		Pills		Total	
	N=109	%	N=69	%	N=115	%	N=108	%	N=401	%
Offered preferred method	**16**	**15%**	**22**	**32%**	**37**	**32%**	**51**	**47%**	**126**	**31%**
Offered non-preferred method	**25**	**23%**	**15**	**22%**	**22**	**19%**	**19**	**18%**	**81**	**20%**
Denied preferred method for medical reason	1	4%	0	0%	2	9%	8	42%	11	14%
Denied preferred method for structural reason	19	76%	14	93%	17	77%	6	32%	56	69%
Denied preferred method for bias-related reason	5	20%	1	7%	3	14%	5	26%	14	17%
Denied all methods	**68**	**62%**	**32**	**46%**	**56**	**49%**	**38**	**35%**	**194**	**48%**
Denied all method for medical reason	15	22%	14	44%	34	61%	21	55%	84	43%
Denied all method for structural reason	51	75%	18	56%	19	34%	17	45%	105	54%
Denied all method for bias-related reason	2	3%	0	0%	3	5%	0	0%	5	3%

There were also patterns in reasons for all method denial by method preference. Providers denied all methods to mystery clients seeking IUCD in 62% of visits, a far higher proportion than for any other method (Table 6). These providers denied all methods due to structural reasons in 75% (n=51) of these visits (Table 6). In the qualitative data, there were structural factors unique to IUCDs, for example, lack of sterilized speculums and provider ability to insert IUCDs. Many mystery clients, like the one below, were told to return another day for IUCD insertion, but were given no protection against pregnancy in the interval.

[The provider] inquired my preference and I said IUCD. He said its available and free, but unfortunately he can't offer it at the moment as it requires preparation and some good time to sterilize. He told me to just allow him to [prepare] and I go back on Monday to be offered. – ***MC 5, married, no children, under 80kg. Preferred method: IUCD.***

While structural reasons tended to be the most common category in preferred method or all method denial, medical reasons for all method denial was the most common category for two methods: injectables and pills. Among the 49% of injectable seekers and 35% of pill users were denied all methods, 61% (n=34) of injectable seekers and 55% (n=21) of pill seekers who were denied all methods were denied for a medical reason (Table 6). Pill seekers who were offered a

non-preferred method also faced more medical reasons for preferred method denial than compared to other methods: among the 18% of pill seekers who were denied offered a non-preferred method (n=19), 42% (n=8) were denied the pill for a medical reason, compared to 9% of injectable seekers, 4% of IUCD seekers, and 0% of implant seekers.

While the mystery clients reported few instances of provider bias affecting their visit outcomes, we repeated the chi-squared tests examining associations between mystery client characteristics and visit outcome, disaggregating by method type and found significant results among injectable and IUD seekers. For injectable users, marital status and parity were statistically significant (p=0.026); however, we are unable to differentiate between the effects of marital status and parity because all married mystery clients were also nulliparous, and all unmarried mystery clients were parous (Table 7). For IUCD users, parity and weight were statistically significant (Table 7). For parity, this seems to be driven by those offered non-preferred methods and those denied all methods, with those without children being more likely to be denied preferred or all contraception (p=0.028). For weight, those of lower weights were more likely to be redirected to a different method or denied all methods (p=0.02).

Table 7. Associations between mystery client characteristics and visit outcome in 401 visits to public facilities in Kisumu, Kenya.

	Offered Preferred Method	**Offered Non-Preferred Method**	**Denied All Methods**
Injectable	**37 (32%)**	**22 (19%)**	**56 (49%)**
Marital Status			
No	30 (83%)*	12 (55%)*	33 (59%)*
Yes	6 (17%)*	10 (45%)*	23 (41%)*
Parity			
No	6 (17%)*	10 (45%)*	23 (41%)*
Yes	30 (83%)*	12 (55%)*	33 (59%)*
Weight			
Under 80 kg	26 (72%)	15 (68%)	37 (66%)
Over 80 kg	10 (28%)	7 (32%)	19 (34%)
ICUD	**16 (15%)**	**25 (23%)**	**68 (62%)**
Marital Status			
No	2 (13%)	11 (44%)	23 (34%)
Yes	14 (88%)	14 (56%)	45 (66%)
Parity			
No	8 (50%)*	22 (88%)*	45 (66%)*
Yes	8 (50%)*	3 (12%)*	23 (34%)*
Weight			
Under 80 kg	9 (56%)*	23 (92%)*	55 (81%)*
Over 80 kg	7 (44%)*	2 (8%)*	13 (19%)*

* Chi-square test significant at p<0.05
** Chi-square test significant at p<0.01
*** Chi-square test significant at p<0.001

Discussion

In this mixed-methods analysis of mystery client data from public facilities in Kisumu, we found that less than a third (31%) of providers offered mystery clients their preferred method and nearly half of all providers (48%) did not offer mystery clients any method of family planning. While many of these clients were referred to other facilities for their preferred method, providers rarely offered pregnancy prevention in the interim. These results are concerning, especially given that a previous mystery client study conducted in the same region in 2019 had a much lower rate of preferred method denials, with 79% of mystery clients being offered their preferred method.[11] Mystery clients were provided with a range of reasons, both legitimate and illegitimate, for preferred method denial. Notably, invalid medical reasons for denial ranged from blatant misapplication of contraindication criteria (IMCs) to refusal to provide contraception without proof of menstruation, despite the mystery client's memorizing a history that would allow for provision of contraception using the WHO's recommended pregnancy checklist. Structural factors were also high barriers to mystery clients receiving a preferred or any method, especially factors like stockouts and lack of trained providers. Provider bias towards unmarried and/or nulliparous mystery clients was not a major barrier to contraceptive provision in the qualitative data, but some mystery client characteristics, especially parity, were significant in our chi-squared tests. Additionally, we found significant differences in ability to access preferred contraceptive methods by method type, with mystery clients facing more barriers when seeking IUCDs, implants, and injectables than when seeking pills.

Our findings around medical reasons for preferred contraceptive method denial reveal a number of medical barriers, including IMCs, prevent women in Kenya from accessing their preferred methods of contraception. While Shelton *et. al.* separate out inappropriate contraindications, eligibility requirements, and process hurdles as separate medical barriers, pregnancy test or proof of menstruation requirements can operate as all three, especially in cases where providers refuse to administer a method like an IUCD when patients are not menstruating. As with our study, proof of pregnancy or menstruation requirements have been documented in similar settings.[11,38] Despite the existence of specific job aids – like the pregnancy checklist – that have been designed to prevent this medical barrier, pregnancy test requirements accounted for most of the medical reasons for denial.[34] While mystery clients with larger body sizes did not have a higher likelihood of being denied a preferred method or all methods of contraception, we also found evidence that providers were not appropriately applying the medical eligibility criteria provided by both the WHO and the Kenyan government, as some of our mystery clients with larger body sizes were denied contraceptive methods due to weight alone, or were mocked for their body sizes.[34,37] This is continued evidence of the role of inappropriately applied medical contraindication and medical eligibility criteria as a barrier to contraceptive autonomy.

Structural factors were the most frequently experienced barriers to obtaining preferred contraceptive methods, especially stockouts of commodities and related supplies, like sterilized speculums or gloves. The impact of contraceptive stockouts, provider absenteeism, and lack of providers trained to insert LARC methods have previously been documented in this and in similar contexts.[11,18,39,40] However, our findings also illustrate the structural adaptations that providers are making in this context. Some of these adaptations require significant effort on the part of providers, including direct hand-offs of clients via personal phone calls to providers at other facilities and arranging for commodity delivery or a visit from a more skilled provider from other facilities. In other instances, the burden of addressing structural barriers fell to the patient – for example, the mystery client who was instructed to personally purchase an injectable and

return to the facility for administration. Given the influential role of structural factors in preferred method denial, addressing issues with commodity supply chains, availability of non-commodity supplies like gloves and sterilized speculums, and increasing the number of providers trained who can *confidently* offer LARC methods like IUDs and implants could positively impact providers' ability to offer clients their preferred contraceptive methods.[41,42]

Despite the large research and programmatic focus paid to provider bias in contraceptive service provision[23,43], we found conflicting evidence of method denial due to mystery clients' sociodemographic characteristics, including marital status, nulliparity, and weight. While parity and weight were significant in our chi-squared tests, few mystery clients were able to identify when provider bias on one of these characteristics led to preferred method denial. Those that did occur were specifically linked to medical misconceptions about the appropriateness of specific contraceptive methods, for example, concern about long return to fertility or risk of infertility with injectable contraception. Weight bias did not run in the direction we hypothesized in the chi-squared tests and the quantitative results did not align with the qualitative data, where mystery clients of larger body size reported experiencing of denial due to their weight. More information is needed on the role of implicit bias or hidden bias in provider denials of preferred methods, especially to women without children in this context.

One aim of this analysis was to identify evidence of the role of IMCs in preventing women from accessing their preferred methods. We found some mystery clients, especially those of large body size, reported being denied method specifically due to their weight or concerns about high blood pressure, but these explicit denials were infrequent. Still, when providers denied preferred or all methods for non-structural reasons, these decisions were often medicalized. Denial based on parity or age, for example, was justified using medicalized language around hormones, infertility, and risk of sexually transmitted infections. These denials blur the lines between IMCs and other medical reasons for denial – while not exactly medical *contraindications*, they are inappropriate medical reasons for denial, as they are not evidence-based. Our findings around IMCs and medical reasons for denial reinforce the need to challenge prevalent medical misinformation or misunderstandings that may cause providers to restrict access to specific contraceptive methods.[11,38]

This analysis was limited in that we only have the mystery clients' interpretation of why they think they were denied methods by providers. For example, while some providers may have been more likely to deny nulliparous women their preferred methods or any methods, they may have given the mystery client a different reason, leading to mis-categorization in the qualitative data. In some cases, the provider did not state a reason, or ended the contraceptive consultation before the mystery client could ask why they were denied a method. To standardize across methods, all mystery clients presented as first-time family planning clients, which may reduce the generalizability of these results to all current contraceptive users. Additionally, the mystery client methodology has limitations around the amount of data we can collect on providers. Therefore, we do not know how many unique providers were seen by mystery clients, provider characteristics outside of gender and cadre, and we do not know if the same providers were working in more than one facility. To account for this, we only analyzed this data at the individual level, and did not look at facility or provider characteristics. Most significantly, the structure of the mystery client data in this study did not allow for regression methods to be used, as not all combinations of mystery client characteristics were present for every outcome. We believe that the chi-squared results are, to some extent, being driven by the preferred method assignment or a correlation between parity and body size, and being able to control for mystery

client characteristics in a regression model would better isolate which provider biases could impact visit outcomes. Future work could explore how to distribute mystery client characteristics across method types differently to avoid these data structure issues.

However, several strengths are noteworthy. Our mystery client methodology is a strength of this analysis. As providers did not know that they were under observation, we were able to collect data closer to what a typical family planning client would experience than if we had directly observed patient-provider interactions. The mystery clients were extensively trained to provide standardized information on their contraceptive consultations, allowing us to compare across mystery clients, but also provided us with their insights and subjective experiences in the long-form comments. This allowed us to complete a mixed-methods analysis to more comprehensively understand the client experience at these facilities.

Conclusion

In public sector facilities in Western Kenya, our mystery clients identified several barriers to obtaining preferred methods or any method of contraception. Our study found that structural barriers substantially contribute to preferred method denial. We found mixed evidence around the role of provider bias, with quantitative results showing strong association between sociodemographic characteristics and being denied a preferred or all methods, but with few mystery clients able to report that a provider explicitly denied them a method due to a sociodemographic characteristic. Finally, we found continued evidence of the role of IMCs and other medical barriers in contributing to preferred method denials. This data indicates that considerable effort is needed to address the multi-faceted challenges facing contraceptive seekers at public facilities in Kenya. Targeted interventions would include strengthening supply chains for both contraceptive commodities and other supplies needed to offer contraception (gloves, alcohol pads, etc.) to ensure consistent availability of methods and improved provider training in medical eligibility and contraindication criteria, including age and parity recommendations for specific method use. Without these interventions, contraceptive seekers in Kenya face unnecessary facility-level barriers to accessing preferred methods, which unjustly limits their contraceptive autonomy.

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Appendix A. Categorization of Reasons for Preferred or All Method Denial into Medical, Structural, or Provider-Bias Related Reasons

Reason	Medical Reason	Structural Reason	Provider-Bias Related Reason	Explanation
This method/ all methods were stocked out/not available today		X		Typically caused by supply chain issues outside of provider control.
Provider recommended or preferred that I used a different method than the one I was assigned*	X	X	X	This could be any of the three reasons, depending on the justification the provider gave for denial.
Provider did not want to offer this method/ any method without a pregnancy test or proof I am not pregnant.*	X			Some facilities had blanket policies that everyone must take a pregnancy test. However, mystery clients had memorized correct answers to a pregnancy checklist that should have allowed them to receive their method without taking a pregnancy test.
The facility does not offer this method/ any family planning methods today.		X		Typically outside of provider control.
There was no appropriate provider available today to provide any family planning methods to me		X		Could have been caused by provider absenteeism, or due to facilities having providers who are not trained to offer all methods.
The provider said I should be married first before using this method/ any family planning method			X	Providers had to explicitly state marital status as a reason for mystery clients to indicate this reason. Kenyan

				guidelines state that providers should not take marital status into account for the methods mystery clients requested.
The provider said I should have children first before using this method/ any family planning method	X		X	Providers had to explicitly state marital status as a reason for mystery clients to indicate this reason. Kenyan guidelines state that providers should not take parity into account for the methods mystery clients requested.
The provider would not provide this method/ any method until I submitted to an HIV test / COVID test/ COVID vaccine*	X			There is no medical reason someone would need to take one of these tests before being offered contraception.
The equipment or supplies needed to provide any method is/are not available at this facility today		X		Not all facilities have autoclaves, and some facilities lacked non-method supplies like gloves or speculums.
The provider was too busy to provide this method/ any family planning methods today		X		This could be caused by high patient loads or provider absenteeism.
The provider refused this method/ all family planning methods due to obesity or hypertension**	X			Mystery clients only selected this option if providers explicitly named weight or blood pressure as a reason for denial.
The provider refused this method/all methods of family planning because of a contraindication.**				Mystery clients were trained to ask for more details about contraindications if a provider stated they could not use a

				method for a medical reason.
The provider refused this method /all methods because of concerns about side effects (weight gain, hypertension, infertility, delayed return to fertility, heavy bleeding,) or concern about hormones*	X			While providers should counsel about side effects, it should be up to the patient to decide which method they would like to use. Denial based on a side effect profile that the patient is accepting of would be an inappropriate medical reason for denial.
The provider refused this method/all methods because I did not have my partner's permission			X	For methods outside of sterilization, Kenyan guidelines indicate that provider permission should not restrict method choice.
*These reasons are often medical barriers, but may or may not be inappropriate medical contraindications (IMCs). For example, if the facility policy is that everyone needs a pregnancy test before getting contraceptive counseling, this would be a medical barrier, but not an IMC. However, if the provider said that they cannot give a method to someone they suspect is pregnant and the only way to prove that one is not pregnant is a pregnancy test or proof of menstruation and that they cannot use the pregnancy checklist, this could be considered an IMC. **These reasons are definitely IMCs, as the mystery clients memorized profiles that did not have any medical contraindications for using their preferred method.				