

Effectiveness of a community-based contraceptive counseling and referral intervention for young mothers: A quasi-experimental study in urban informal settlements in Nairobi, Kenya

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Abstract

Background

Few studies have examined interventions aimed at improving contraceptive uptake among young mothers (ages 15–24 years) in urban informal settlements. This study evaluated the effectiveness of a community health promoter (CHP)-led intervention in improving contraceptive uptake and method choice among young mothers in urban informal settlements in Nairobi.

Methods

This study was a quasi-experimental evaluation conducted in two urban informal settlements in Nairobi, Kenya. Young mothers in the intervention site received the intervention package, which included home counselling visits by CHPs, follow-up support, and referral vouchers. Their counterparts in the comparison site received the usual standard of health care. Baseline and end-line surveys were conducted in both sites. Data were analyzed to measure changes in contraception uptake, method mix, and satisfaction with care. Propensity score matching was conducted to test for significant differences between the intervention and comparison groups.

Results

Contraceptive uptake increased from 45.7% at baseline to 77.1% at endline in the intervention site, and from 39.8% at baseline to 59.3% at endline in the comparison site showing that more young mothers in the intervention site received contraception than in the comparison site. The contraceptive method mix showed a significant shift from pre-dominantly short-term methods to long acting and reversible methods. Young mothers primarily obtained contraception from the public sector with the proportion increasing from 70.5% to 87.5% for the intervention site. The quality of counselling, measured by the method information index, increased from 14.2% at baseline to 47.4% at endline in the intervention site. Regression analysis showed that young mothers from the intervention site were more likely to use modern contraceptives ($B = 0.556$, 95% CI: 0.313-0.800) than those from the comparison site

Conclusion

The evidence generated through this quasi-experimental evaluation shows that a CHP-led intervention can significantly improve contraceptive use, method mix, and quality of counselling among young mothers. The intervention has the potential for scale-up of contraceptive access to women across other urban informal settlements.

Plain English Summary

This study tested a program using Community Health Promoters (CHPs) to help young mothers (ages 15–24) in urban informal settlements use contraception to delay or prevent unintended pregnancy. The program involved the CHPs visiting the participants at home, giving advice, follow-up support, and referral vouchers for services. The study compared two communities in Nairobi: one group received this program, and the other group received normal healthcare. It was observed that contraceptive use increased in both groups, but much more in the group that received the program. More young mothers started using long-term contraceptive methods and also more participants received services from public health facilities. The quality of counselling improved overall, but especially in the group that received the program. Overall, young mothers in the program were more likely to use modern contraception. Our findings suggest that the program which provides community-based support, home visits, guidance and vouchers works well in improving contraceptive use among young mothers living in informal settlements.

Background

Adolescent childbearing remains a global health and socio-development challenge, with an estimated 13% of girls becoming mothers before age 18 [1]. Adolescent pregnancy is particularly common in sub-Saharan Africa (SSA). In 2024, West and Central Africa reported the highest regional adolescent birth rate, with 105 births per 1,000 adolescent girls aged 15-19 years, in contrast to the global rate of 42 births per 1,000 [2]. In Kenya, adolescent pregnancy has garnered prominent public interest and discourse [3]. According to the 2022 Kenya Demographic and Health Survey (KDHS), 15% of Kenyan adolescents aged 15-19 years were either pregnant or mothers [4]. Adolescent pregnancies in Kenya have also been found to be disproportionately concentrated among communities living in urban informal settlements (slums) [5]. Adolescent pregnancy has often been linked to life-changing, detrimental outcomes, including education discontinuation and jeopardizing future economic prospects for girls and young women [6,7].

In Nairobi, informal settlements constitute an estimated 60% of the city's population [8]. Urban informal settlements are often characterized by poor access to sexual and reproductive health (SRH) services, poverty, and high rates of sexual violence and transactional sex [9]. These issues are established in literature as risks for adolescent pregnancy [2]. Studies conducted in these contexts have reported disproportionately high rates of unintended and repeat pregnancies among young women [10,11]. Evidence from these contexts also highlights low modern contraceptive use, and high rates of discontinuation due to widespread myths and concerns about side effects [6].

The reasons for low contraceptive uptake among adolescent girls and young women in general are complex. Lack of self and reproductive agency [12,13], low contraceptive knowledge as well as misconceptions and fears about fertility [14] are all important individual-level barriers to adolescent contraceptive uptake. Community-level barriers that hinder young women's contraceptive uptake include socio-cultural norms that promote early marriage and childbirth [15–17] and gender norms that promote pronatalism among young women. Structural barriers include few healthcare facilities and indirect costs of services [18–20]. Concerns about the quality of care within public healthcare facilities due to a perceived

lack of respect, privacy, and confidentiality, fear of stigma and discrimination, and imposition of the moral values of healthcare providers [18,21,22] are also documented barriers to contraceptive uptake among young girls and women.

Although evidence on contraceptive uptake barriers is well documented, there are gaps in understanding the effectiveness of interventions that improve contraceptive uptake among young mothers living in urban informal settlements in sub-Saharan Africa. Existing research demonstrates that SRH education, counseling, and contraception provision are effective in increasing contraceptive knowledge and use and can potentially reduce adolescent pregnancy and repeat pregnancy [23–25]. There is also nascent evidence from broader population research, which shows that integrating community health volunteers (CHVs) into mainstream health systems is an impactful and cost-effective strategy to increase contraceptive access [26,27]. This strategy works by bringing contraceptive services directly to clients within communities, and by reducing health system burden through task shifting.

The community-based contraceptive counseling and referral intervention

We implemented a low-cost intervention centered on Kenya's community health strategy and existing SRH infrastructure to facilitate young mothers' (ages 15 – 24 years) access to contraceptive information and services. The intervention comprised an integrated task-shifting approach, which employed trained community health promoters (CHPs) who are community-selected and government-supported CHVs who provide the first point of care in rural and underserved communities [28]. The CHPs were trained to provide individualized contraception counselling during home visits to enhance contraception uptake and continuation. A total of 11 CHPs from 11 villages in Korogocho, an informal settlement in Nairobi, participated in a five-day training conducted by Marie Stopes Kenya (MSK) and the Nairobi County Reproductive Health Department. In addition, six healthcare providers from nearby private and public clinics and health centers were trained to deliver youth-friendly contraceptive services. The training drew on adapted content from the World Health Organization's *"A Guide to Family Planning for Community Health Workers and their clients"* (WHO, 2012).

CHVs visited each young mother in the intervention area and provided individualized home-based contraception information and counseling on the full range of contraceptives. They also issued a referral voucher for services at nearby participating public or private health facilities. Upon visiting health facilities, the adolescents received further counseling and obtained a contraceptive method of choice from the trained providers. The provider counselling focused on method choice and dispelling myths about contraception methods. The use of vouchers was targeted at reducing financial barriers that are documented to restrict access to contraceptive uptake, especially long-acting reversible contraceptives (LARC) methods, whose upfront costs may be high [29,30]. The intervention also provided a subsidy for indirect costs related to receiving contraceptive methods, including transport and pregnancy testing fees.

The intervention targeted young mothers who reported not using any contraceptive methods at all or were using only short-term methods (such as male condoms, daily pills, and natural methods) at baseline. It aimed to promote uptake of modern contraceptives, especially LARCs such as implants and intra-uterine devices (IUDs). MSK and the Nairobi County Reproductive Health Department supported the implementation, which run from February – July 2023.

Before implementation, community mobilization meetings were held with community leaders, and the CHPs to secure stakeholder buy-in for the intervention targeting young mothers. These meetings were informed by implementation research findings emphasizing the importance of engaging key community gatekeepers, such as parents, community and religious leaders, to build wider community support and enhance contraceptive use among adolescents [31]. Stakeholder engagement meetings were also conducted with the Nairobi City County Health Directorate and Health Management Teams (HMTs) from the two sub-counties where the study sites were located. These engagements aimed to obtain health-system support for the intervention. Accordingly, the Nairobi City County Health Directorate and the Community Health Services Unit facilitated the recruitment and training of the CHPs and healthcare providers involved in the project.

Data and Methods

Study design and sites

This quasi-experimental study was conducted to evaluate whether individualized contraception counseling and follow-up by CHPs through home visits and referral to health facilities is effective in increasing contraception uptake among young mothers. The study was conducted in two informal settlements—Korogocho and Viwandani—in Nairobi, Kenya's capital city. Korogocho served as the intervention site while Viwandani was the comparison site. Korogocho was selected as the intervention site because it is comparatively more stable, with most residents having lived there for an extended period, thus minimizing the potential loss to follow-up [32]. Comparatively, Viwandani has a more youthful migrant population that is attracted to the settlement by possibilities of employment opportunities at the neighboring industrial area.

To estimate the effects of the intervention, we tracked, monitored, and evaluated the project using key indicators of contraceptive uptake and method mix. In both sites, baseline and endline surveys were conducted to measure knowledge and attitudes towards contraception, current use and method mix, and continuation of use.

Study population and eligibility

The study was conducted in geographically separate intervention and comparison communities to mitigate the possibility of contamination. The study's eligibility criteria required participants to be an adolescent girl or young woman aged 15 to 24 years, have resided at their current home for at least 12 months, have given birth in the five years before the study, and have given their consent to participate. Those who were not sexually active and therefore not in need of contraception were considered ineligible for the study at

baseline. Furthermore, only participants who were interviewed during the baseline study were included in the endline survey.

Ethical approval for the study was granted by the Amref Health Africa's Ethical and Scientific Review Committee (ESRC P1171/2022). The National Commission for Science, Technology, and Innovation (NASCOSTI) granted the research permit for conducting the study in Nairobi County, Kenya (NACOSTI/P/22/21403). All participants provided consent to participate in the study after undergoing an informed consent process. All activities were conducted in accordance with the Declaration of Helsinki.

Sample size and sampling

The same number of young mothers ($n=201$) were recruited from both the intervention site and the comparison site. Sample size and power calculations were based on the expected change in the use of modern contraception methods, including injectables, implants, and IUDs. Data from the 2014 KDHS [33] were used to obtain estimates of baseline contraceptive use among sexually active adolescent girls for the sample size calculation. The 2014 KDHS showed that 20.3% of sexually active adolescents in Kenya used injectables and LARCs[33]. To the best of our knowledge, there was no research that examined the effects of any intervention on improving contraceptive method choice among adolescents in urban informal settlements to provide an estimate of effect size. To fill that gap, we used data from the 2017 Strengthening Evidence for Programming on Unintended Pregnancy (STEP UP) survey that showed that about 12.3% of young women aged 15 – 24 years in Korogocho and Viwandani slums desired to shift from condoms, pills, and traditional methods to injectable and LARC methods (implants and IUDs) [34]. In addition, assumptions of level of significance of 5%, and statistical power of 80% were used to estimate a sample size of 201 young mothers per group for a total of 402 study participants. Participants of the intervention were drawn out of a census of young mothers who participated in the lived experiences study led by the African Population and Health Research Center [35]. A separate census of parenting young mothers was done in the comparison site of Viwandani with the assistance of CHPs.

Outcomes and measures

The primary outcome variable of the study was use of modern contraception methods by young mothers, measured as whether the respondent was using any method or a modern method at the time of the survey. The study also examined the contraceptive method mix, including the specific type of method used, as well as the quality of contraceptive counselling, assessed using the Method Information Index (MII). The MII was calculated as the proportion of women who responded “yes” to all three MII questions: whether they were informed about alternative contraceptive methods, whether they were informed about possible side effects, and whether they were told what to do if they experienced side effects. The main exposure variables were intervention implementation and contact with CHPs, measured by whether the respondent had been visited by a CHP. Covariates included the young mothers' age, level of education, marital status, and employment status.

Data analysis

The dataset was cleaned and analyzed using STATA version 18 software. Descriptive analysis was conducted according to the study’s objectives. The baseline-endline dataset was also analyzed using propensity score matching (PSM) to account for observed differences between the intervention and comparison groups at baseline. One of the primary advantages of PSM is its ability to balance covariates effectively. This is achieved by generating propensity scores that mimic the likelihood of an individual belonging to the intervention or comparison group based on certain variables [36,37]. By matching individuals from the comparison and intervention groups with similar propensity scores, PSM helps rectify imbalances, reducing the risk of confounding variables and ensuring that any observed changes in contraceptive use are more likely attributable to the intervention's effects rather than pre-existing differences between the groups. We estimated propensity scores using a logistic regression model that included covariates and intervention variables. Statistical tests of significance were set at a 95% confidence interval.

Results

Response rate

A sample of 402 prospective respondents who met the eligibility criteria were invited to participate in the baseline survey, out of which 398 (99%), 197 in the intervention arm and 201 in the comparison arm, participated. In the endline survey, 347 (86%) of the baseline samples consented to be re-interviewed.

The mean age of participants at baseline was 20.2 years (standard deviation: 1.9 years), with young mothers from the comparison group (Viwandani) being older than the intervention group. Most participants from both groups had some or completed secondary education, although Viwandani had more young mothers with education beyond secondary level. Almost all the participants (93.7%; n=373) were out of school at the time of the study. In terms of marital status, Korogocho had a higher proportion of young mothers who were either married or living with a partner (58.9% vs 41.7%). About two-thirds (64.6%, n=257) of participants described their religious affiliation as Protestant or other Christian denomination. About two-fifths of participants (39.5%; n=157) reported that they were engaged in an income generating activity, with significantly more young women from the intervention site (45.7% vs 33.3%) reporting engaging in an income generating activity (Table 1).

Table 1: Sociodemographic Characteristics of Participants at baseline and endline, Nairobi, 2023

	Baseline			Endline		
Characteristic	Korogocho n (%)	Viwandani n (%)	P- value	Korogocho n (%)	Viwandani n (%)	P-value
Current age						
15-19	100 (50.8)	67 (33.3)	<0.01**	56 (32.0)	44 (25.6)	0.187
20-24	97 (49.2)	134 (66.7)		119 (68.0)	128 (74.4)	
Mean age (SD)	19.9 (2.04)	20.4 (1.90)		20.7 (2.02)	20.8 (2.02)	
Highest level of education						
Some /completed primary	83 (42.1)	49 (24.4)	<0.01**	71 (40.6)	37 (21.5)	<0.01**
Some /completed secondary	109 (55.3)	124 (61.7)		98 (56.0)	104 (60.5)	
Beyond secondary/vocational	5 (2.5)	28 (13.9)		6 (3.4)	31 (18.0)	
Current school attendance						
Attending/ In school	13 (6.6)	12 (6.0)	0.796	14 (8.0)	11 (6.4)	0.563
Not attending/ Out of school	184 (93.4)	189 (94.0)		161 (92.0)	161 (93.6)	
Marital status/relationship						
Married/cohabiting with partner	116(58.9)	96(47.8)	0.012	73 (41.7)	55 (32.0)	<0.01**
Has a (non-habiting) boyfriend/ romantic partner	21(10.6)	42(20.9)		72 (41.1)	60 (34.9)	
Single/ Not in a relationship	60(30.5)	63(31.4)		30 (17.1)	57 (33.1)	
Religion						
Roman Catholic	51 (25.9)	40 (19.9)	<0.01**	38 (21.7)	44 (25.6)	<0.01**
Protestant/other Christian	111 (56.4)	146 (72.6)		100 (57.1)	115 (66.9)	
Islam	29 (14.7)	7 (3.5)		29 (16.6)	7 (4.1)	
Other	6 (3.1)	8 (4.0)		8 (4.6)	6 (3.5)	

Employment status						
Working for cash/pay	90 (45.7)	67 (33.3)	0.012*	85 (48.6)	91 (52.9)	0.419
Did not work outside the home	107 (54.3)	134 (66.7)		99 (51.4)	81 (47.1)	
Total/Response rate	197 (98%)	201 (100%)	398 (99%)	175 (87%)	172 (85.6%)	347 (86%)

* Significant at 5% level ** significant at 1% level

Contraceptive use and method mix

At baseline, contraceptive use was higher among participants in the intervention group (45.7%) compared to the comparison group (39.8%). The most common contraceptive method among the intervention group at baseline was the daily pill (61.1%) followed by male condom (34.4%). Majority (70.5%) of contraceptive users obtained the method from a public facility. Among the comparison group, male condom was the most common contraceptive method (51.3%) followed by traditional/natural methods (22.5%). Most contraceptive users in the comparison group (69.2%) obtained the method from a private facility (Table 2).

The use of any contraceptive methods increased significantly from 45.7% to 77.1% among the intervention group and from 39.8% to 59.3% in the comparison group. There was a significant increase in the use of any contraceptive methods for both groups although the intervention site showed greater improvements than the comparison site. The use of modern methods increased significantly in the intervention site from 43.7% at baseline to 76.6% at endline, and from 23.4% to 45.3% in the comparison site during the same period. The contraceptive method mix also showed a significant shift from short-term methods such as daily pills and male condoms to injectables and LARC methods such as implants for both the intervention and comparison sites at the endline. Implant was the most used method at endline for both intervention (49.6%) and comparison (25.5%) groups. Public facilities were also the most common source of contraceptive methods for both intervention (87.5%) and comparison (61.9%) groups at endline (Table 2). Nearly a quarter (25.5%) of young mothers in the comparison group reported using natural and traditional methods at endline.

Quality of care, measured by the MII, also improved between baseline and endline surveys. Only 14.2% of users in the intervention group and 1% in the comparison group reported that they had received all three counseling messages from a provider at baseline. By endline, this had risen to 47.4% in the intervention group and 15.7% in the comparison group. The proportion of users who reported they would return to the same facility for contraception was not different at baseline and endline in the intervention group. However, a significantly higher proportion of young mothers in the comparison group reported that they would return to the same facility at endline (88.4%) compared to baseline (52.0%) Likewise, a significantly higher proportion of young mothers in the comparison group reported that they would refer a friend to that facility at endline (89.9%) than at baseline (64.0%). The change was not significant for the intervention group (94.8% at baseline; 97.7% at endline).

Table 2: Contraceptive use, method mix and quality of care at baseline and endline, Nairobi 2023

	Korogocho			Viwandani		
Characteristic	Baseline n (%)	Endline n (%)	P-value	Baseline n (%)	Endline n (%)	P-value
Currently using any method to delay or avoid getting pregnant						
Yes	90 (45.7)	135 (77.1)	<0.01**	80 (39.8)	102 (59.3)	<0.01**
No	107 (54.3)	40 (22.9)		121 (60.2)	70 (40.7)	
Currently using modern methods (excluding male condom)						
Yes	86 (43.7)	134 (76.6)	<0.01**	47 (23.4)	78 (45.3)	<0.01**
No	111 (56.3)	41 (23.4)		154 (76.6)	94 (54.7)	
Contraceptive method currently used (Modern contraceptives used)						
IUD	0 (0.0)	1 (0.7)	<0.01**	0 (0.0)	0 (0.0)	<0.01**
Daily pills	55 (61.1)	20 (14.8)		6 (7.5)	12 (11.8)	
Implant	0 (0.0)	67 (49.6)		0 (0.0)	26 (25.5)	
Injectables	0 (0.0)	36 (26.7)		0 (0.0)	20 (19.6)	
Emergency pills	1 (1.1)	0 (0.0)		6 (7.5)	1 (1.0)	
Male condom	31 (34.4)	9 (6.7)		41 (51.3)	20 (19.6)	
Traditional / natural methods	3 (3.4)	1 (0.7)		18 (22.5)	26 (25.5)	
Sources of contraception for adolescents						
Public facility	43 (70.5)	112 (87.5)	<0.01**	8 (30.8)	39 (61.9)	<0.01**
Private facility	18 (29.5)	16 (12.5)		26 (69.2)	24 (38.1)	
Quality of counselling received (MII)*						

Heard all three counselling (MII) messages from provider	28 (14.2)	83 (47.4)	<0.01	2 (1.0)	27 (15.7)	<0.01
Would return to that facility for contraception	74 (96.1)	128 (97.7)	>0.05	26 (52.0)	61 (88.4)	<0.01
Would refer a friend to that facility	73 (94.8)	128 (97.7)	>0.05	32(64.0)	62 (89.9)	<0.01

*Among those who received modern methods

Multivariate analysis

The multivariate analysis showed that being contacted by a CHP during the six months before the endline had a positive but non-significant effect (0.219, 95% confidence interval (CI):0.045-0.483) on contraceptive use at endline. Compared to Viwandani (the comparison group), being in Korogocho was strongly and significantly associated with a higher likelihood of contraceptive uptake at the endline (0.556, 95% CI:0.313-0.800).

Although the two groups differed in their socio-demographic characteristics at baseline, age and education status were not significantly associated with uptake of contraception. However, young mothers who were involved in paid work (0.223, 95% CI: 0.014-0.433) were more likely to use contraception than those not employed while young mothers who were not in a relationship were less likely to use contraception (-0.410, 95% CI: -0.644-0.177) compared to young mothers who were married or living with a partner. (Table 3)

Table 3: Propensity Score Matching model for predicting use of modern contraceptives

	Coefficient	p-value	[95% conf. interval]	
Site				
Viwandani	Reference			
Korogocho	0.556 (0.124)	<0.001**	0.313	0.800
Visited or called by CHP				
No	Reference			
Yes	0.219 (0.135	0.105	-0.045	0.483
Frequency of CHP visits	-0.050 (0.024)	0.039*	-0.096	-0.003
Age group				
15-19 yrs.	Reference			
20-24 yrs.	0.140 (0.105)	0.183	-0.066	0.346
Education level				
Some/completed primary	Reference			
Some/completed secondary	0.001 (0.110)	0.990	-0.214	0.217
Beyond secondary/vocational	-0.119 (0.195)	0.542	-0.500	0.262
Employment status				
Did not work outside the home	Reference			
Paid work	0.223 (0.107)	0.036*	0.014	0.433
Marital status				
Married/living with partner	Reference			
Has a boyfriend or romantic partner	0.080 (0.167)	0.631	-0.248	0.408
Not in a relationship at all	-0.410 (0.119)	0.001*	-0.644	-0.177
Constant	-0.297 (0.150)	0.047*	-0.591	-0.003

Discussion

This study evaluated the effectiveness of a CHP-led community intervention in improving contraception uptake among young mothers in two urban informal settlements in Nairobi. The intervention utilized an integrated task-shifting approach, engaging trained CHPs to deliver contraceptive counseling during home visits, with the aim of promoting uptake and continued use. In the intervention area, CHVs conducted home visits with each young mother, offering personalized information and counseling on the full range of

contraceptive options. They also provided referral vouchers to nearby participating public or private health facilities staffed with providers trained on adolescent services.

Between baseline and endline, contraceptive use increased substantially in the intervention group with many non-users initiating modern methods and previous users of natural or short-term methods transitioning to LARCs. The proportion of young mothers who received all contraceptive counselling messages from health providers also rose markedly, from 15% to 48%, indicating a significant improvement in the quality of contraceptive counseling received. Together, these findings suggest that increases in contraceptive uptake were influenced by both community-level engagement and strengthened facility-based counseling. These results are consistent with evidence from other LMICs where community health volunteer-driven family planning initiatives have been shown to improve contraceptive uptake [38–40].

The provider counselling, which focused on dispelling myths and misconceptions, particularly about LARCs also proved effective in helping address young mother's fears and misconceptions towards contraceptive uptake and use. This was evident in the noticeable shift in both new and existing contraceptive users towards LARC methods after the intervention phase. There has been a gradual increase in the use of LARC methods, particularly implants in Kenya in the last few years and this outcome is in line with national trends [4]. It is also in line with findings from a study conducted in Western Kenya and rural Ghana, where contraception uptake and continuation improved after community health workers addressed demand side barriers including helping women overcome their fear of contraception-related myths through individualized counselling and presentation of various contraceptive options [41, 42].

The increased uptake of contraceptive methods may have also been facilitated by the intervention's systematic efforts to reduce financial barriers. Referral vouchers issued by CHPs enabled young mothers to obtain a contraceptive method of choice at no direct cost from participating public facilities. Evidence from previous studies indicates that voucher programs can substantially increase contraceptive uptake by improving financial access, particularly among disadvantaged groups [43, 44]. In addition to removing direct costs, the intervention subsidized indirect costs such as transportation to the facility and prerequisite pregnancy testing further improving financial access. For a population with limited or no income, eliminating these direct and indirect financial costs makes a substantial difference in the decision to use contraceptive methods. Similar increases in contraceptive use have been reported among Yemeni women who received transportation vouchers to health facilities for reproductive health services [45].

Significant changes occurred in the preferences of contraceptive methods between intervention and comparison groups at baseline and endline. Contraceptive preference shifted from a dominance of short-term methods to LARC. Specifically, at baseline, the dominant methods were daily pills and male condoms respectively for the intervention community, whereas by endline, almost two-thirds of the young mothers had gravitated towards implants and injectable methods. This outcome again underscores the effectiveness of the intervention's messaging, which promoted the uptake of LARCs, which are highly effective in preventing unintended repeat pregnancies [46, 47]. The changes in contraceptive use suggest that the intervention was acceptable and effective.

Overall, the uptake of contraceptive methods at public healthcare facilities increased between baseline and endline, accompanied by significant improvements in quality of care. This could be attributed to several intervention factors. First, in the task-shifting approach, CHPs serve as a conduit between communities and a public health facility. CHPs linked the young mothers to specific healthcare facilities with trained healthcare providers where they could visit with a voucher to access services at no cost. Increased awareness about the availability of various methods at public health facilities could have played a major role in increased utilization of public healthcare facilities. Quality of care, assessed using the MII, showed a significant improvement from baseline to endline. The proportion of young mothers who received a modern method and reported that they would return to the same facility—and would recommend it to a friend—was nearly universal, despite no statistically significant change between baseline and endline. These two specific indicators, i.e. return to the facility and referral of a friend, were two proxy measures for satisfaction with the quality of care provided[48] and contraceptive continuation.

Strengths and limitations

This study has limitations which should be considered in interpretation of the results. First, there was attrition of some respondents between baseline and endline. Although the extent was minimal, those who dropped out may have distinct characteristics that could impact the findings. Furthermore, at baseline and endline, the intervention and comparison groups were significantly different in some socio-demographic characteristics which may influence both the exposure and outcome, making it difficult to determine whether the observed effects were attributable to the intervention or to these underlying differences. We mitigated this challenge using analytic strategies to minimize bias and improve comparability, conducting a propensity score matching analyses to compensate for the observed differences in groups. There might also be a possibility of information contamination between the intervention and comparison sites, as the two sites are not very far from each other and community engagement activities were conducted in both sites prior to the start of the intervention.

Conclusion

The CHP-led intervention substantially improved contraceptive uptake among young mothers living in an urban informal settlement. The training of health providers also enhanced the quality of care and contributed to a favorable method mix, including increased uptake of LARCs, which is an important long-term strategy for reducing unintended pregnancies. These findings demonstrate the feasibility and promise of community-based counselling and referral approaches and suggest strong potential for scale-up in similar settings in Kenya and other LMICs.

Abbreviations

CHP Community Health Promoter

CHV Community Health Volunteer

ESRC Ethics and Scientific Research Committee

HMT Health Management Team

IUD Intra-Uterine Device

LARC Long-Acting Reversible Contraception

KDHS Kenya Demographic and Health Survey

KNBS Kenya National Bureau of Statistics

MII Method Information Index

MOH Ministry of Health

MSK Marie Stopes Kenya

PSM Propensity Score Matching

SRHR Sexual Reproductive Health and Rights

SSA sub-Saharan Africa

WHO World Health Organization

Declarations

Ethics approval and consent to participate: Ethical approval for the study was granted by the Amref Health Africa's Ethical and Scientific Review Committee (ESRC P1171/2022). The National Commission for Science, Technology, and Innovation (NASCOSTI) granted the research permit for conducting the study in Nairobi County, Kenya (NACOSTI/P/22/21403). All participants provided consent to participate in the study after undergoing an informed consent process. All activities were conducted in accordance with the Declaration of Helsinki.

Consent for publication: Not Applicable

Availability of data and materials: The datasets used and/or analyzed during the current study are available from the APHRC Micro-Data Portal (<https://microdataportal.aphrc.org/index.php/catalog>) and the corresponding author on reasonable request.

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