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Chapter 8

Contraceptive Failure among Women in Homa Bay County of Kenya: A Matter of User and Provider Deficiencies

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Additional information is available at the end of the chapter

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Abstract

Although the Kenya family planning program appears successful at the national level—with contraceptive prevalence rate (CPR) in 2014 surpassing the 2015 target of 56%—sub-national variations suggest the need to understand the patterns at the local levels to inform programs to either sustain or improve further the levels that the country has attained. This chapter examines the reasons for contraceptive failure among 166 women aged 15–39 years in three sub-counties of Homa Bay County in Kenya. The findings show that failure of methods such as injectables, pills and condoms was mostly because of challenges with client adherence and inconsistent use. Failure of long-acting and permanent methods such as implants and female sterilization was partly due to limited provider capacity to offer the methods and partly due to inability to afford the costs of resupplies of implants. These patterns were further exacerbated by limited access to adequate information on the part of users, which could enable them make informed contraceptive choices. The experiences of women regarding contraceptive failures—including highly effective long-acting and permanent methods—suggest the need for targeted interventions to address challenges that might hamper the success of the family planning program in such localized settings.

Keywords: contraceptive use, contraceptive failure, user and provider deficiency, rural Kenya

1. Introduction

The potential benefits of family planning have informed efforts to increase investments in contraceptives especially in developing countries since the 1960s [1, 2]. Such benefits include

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improvements in women's and children's health through appropriate spacing of births which in turn contribute to reductions in maternal and child mortality that could arise from having short birth intervals; enhanced educational and employment opportunities for women due to the ability to control their fertility; and environmental sustainability that results from creating a balance between population and available resources [3–7]. Although efforts to improve contraceptive uptake have led to increased use of modern family planning methods in some parts of the developing world, many countries are still characterized by high levels of unmet need for contraception and unintended pregnancies [8, 9]. It was, for instance, estimated that in 2012, 222 million women in developing countries had an unmet need for modern contraceptives, with the prevalence of unmet need being highest in most parts of sub-Saharan Africa [5]. In addition, 40% of 213 million pregnancies that occurred globally in 2012 were unintended, with Africa recording the highest rate of unintended pregnancies per 1000 women aged 15–44 years [10].

Unintended pregnancies result from non-use of contraception, use of ineffective methods, contraceptive discontinuation or switching for reasons other than wanting a pregnancy, and contraceptive failure [8, 9, 11]. With respect to contraceptive failure, which is the focus of this chapter, available estimates show that about a third of unintended pregnancies in developing countries result from method failure [12, 13]. Evidence further shows that contraceptive failure rate (number of failures per 100 episodes of use) within the first year of use is lowest for permanent methods such as female sterilization, followed by longer-acting methods such as implants, intrauterine devices (IUDs), and injectables while short-acting methods such as pills and male condoms have the second highest failure rates after traditional methods including withdrawal, periodic abstinence, and rhythm [12, 13]. Contraceptive failure may negatively affect the success of family planning programs especially in developing countries where uptake of modern methods is further hampered by limited method mix, weak service delivery systems, health concerns about possible side effects, as well as societal opposition to and misconceptions about contraception [6, 14, 15].

Consistent with global efforts to improve family planning uptake in developing countries, national estimates show that the contraceptive prevalence rate (CPR) in Kenya—the proportion of currently married women using any method of contraception—more than doubled from 27% in 1989 to 58% in 2014 [16, 17]. Use of modern methods nearly tripled over the same period from 18% in 1989 to 53% in 2014 [16, 17]. The 2014 CPR level raised excitement among the donor community, policy makers and program implementers since it surpassed the target of 56% that the country had set to achieve by 2015 as part of the Millennium Development Goals (MDGs). The achievement was attributed to a combination of factors, including deliberate efforts to reposition family planning after a decade of focus on HIV/AIDS; implementation of a national program on AIDS, Population and Health Integrated Assistance (APHIA) funded by the United States Agency for International Development (USAID) that focused on health systems strengthening; increased health sector funding for family planning; improvements in the capacity of healthcare workers to provide services; streamlining the procurement and distribution of commodities through the Kenya Medical Supplies Agency (KEMSA); and using innovative service delivery models such as mobile outreaches, in-reach/choice camps in facilities, community-based distribution, and integration of services [18].

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However, the success at the national level masked sub-national disparities in contraceptive use and reach of the family planning program in the country. Estimates from the 2014 KDHS, for instance, showed that CPR varied from a low of 2% in Mandera County in the former North Eastern Province to a high of 81% in Kirinyaga County in the former Central Province [17]. Among counties in the former Nyanza Province, Homa Bay County had the second lowest CPR (of 47%) among six counties in the region (with Nyamira County having the highest CPR of 68% in the region) [17]. The sub-national variations in contraceptive use suggest the need to understand the patterns at the local levels to inform programs to either sustain or improve further the contraceptive prevalence rates that the country has attained. This chapter examines the reasons for contraceptive failure among women in Homa Bay County. Contraceptive failure is likely to negatively affect the future of family planning programs not only in Homa Bay County, but Kenya as a whole and other similar contexts. Understanding the reasons for contraceptive failure is therefore important for informing strategies to further improve the performance of family planning programs in such settings.

From a global perspective, the 2012 London Summit on Family Planning set a goal of providing modern contraceptive methods to 120 million women with unmet need for contraception in 69 of the poorest countries by 2020 [19]. One strategy that has been proposed for achieving that goal is to support the women and girls who are already using contraception to continue using their current methods or to adopt other modern methods [12, 20]. The rationale for the strategy is that programmatically, it requires fewer resources to support those who have already overcome some of the barriers to contraceptive use than to address barriers related to non-use of contraception [12, 20]. Contraceptive discontinuation and failure are major contributors to unintended pregnancy among past and current users of contraception [12, 20, 21]. Understanding the reasons for contraceptive failure is therefore important for informing strategies to achieve the global goal of providing modern contraceptive methods to 120 million women with unmet need for contraception by 2020.

2. Data and methods

2.1. Data

Data are from a cross-sectional study that was conducted between November and December 2016 among currently married or cohabiting women aged 15–39 years in three rural sub-counties of Homa Bay County, namely, Ndhiwa, Rachuonyo north and Rachuonyo south. The county, located along the shores of Lake Victoria in western Kenya region, was purposefully selected based on three factors. First, Homa Bay County is one of the counties with rapidly growing population. According to the 2009 Kenya population and housing census, the county was home to 963,794 people at the time of the census [22]. The population was projected to rise to about 1.2 million persons by 2017, of which, 564,843 were projected to be males while 612,338 females [23]. This growth is largely a result of high fertility, which is estimated at 5.2 children per woman, compared to a national average of 3.9 children per woman [17]. Second, the county continues to experience challenges with respect to reproductive

health. According to the 2014 Kenya demographic and health survey, the level of contraceptive use among currently married women aged 15–49 years was modest at 47% while unmet need for family planning was also among the highest in the country at about 26% [17]. Furthermore, the county has a perpetual burden of high unintended pregnancy and overall high HIV prevalence estimated at 26%, which is the highest in Kenya [24]. Third, the county was easily accessible to the research team, having previously conducted operations research on access to comprehensive reproductive health and HIV information and services for married adolescent girls [25].

The study involved structured interviews with 2424 women who were identified in two stages. In the first stage, 12 sub-locations (the smallest administrative unit in Kenya) were randomly sampled from the list of sub-locations in each sub-county. All households in the sampled sub-locations with currently married women aged 15–49 years were identified with the help of village elders, and all individuals in those households were listed to generate the sampling frame. A total of 3118 women aged 15–39 years were then randomly sampled from among 5424 in the sampling frame that were within that age range and were married at the time of listing (1040 each in Ndhiwa and Rachuonyo north and 1038 in Rachuonyo south sub-counties). The upper age limit was informed by plans to interview the women again in future and the desire for such follow-up interviews to find when they are still within the reproductive age cohort.

Out of the women who completed interviews, 2294 (95%) reported having ever used a contraceptive method while 1563 (64%) were using a method at the time of the survey. Slightly more than a third (39%) of past users reported being dissatisfied with at least a method. Those who reported dissatisfaction with a method were asked about the reasons for each of the methods they were dissatisfied with. A total of 166 out of 896 women (18%) who reported dissatisfaction with methods mentioned failure of at least one method. This chapter focuses on women who reported during interviews that they got pregnant while using a contraceptive method. Although reasons for dissatisfaction were not asked to women who were using female sterilization, four women who were using the method mentioned to interviewers that they experienced method failure. In addition, whereas the study tool was not specifically designed to capture reasons for method failure, the research teams collected additional information on such reasons from 69 of the 166 women and prepared reports on the same. We used the information from the reports to supplement the data captured by the study tool.

2.2. Analysis

Analysis entailed descriptive statistics (frequencies and percentages) and estimation of multivariate logistic regression model examining variations in the likelihood of experiencing method failure among dissatisfied users of contraceptives. The outcome of the model is whether a study participant reported experiencing failure of any method and was coded zero for 'no' and one for 'yes'. The independent variables included the sub-county, age (coded zero for under 25 and one for 25 years and above), education level (no formal schooling or primary incomplete, primary complete, and secondary and above), religious affiliation (protestant/other Christian or otherwise), number of times married (once or more than once), living arrangements with partner (living away or with respondent), and number of living children

(less than four and four or more). The analysis adjusted for clustering of individuals residing in the same village, and the results are presented as odds ratios (OR) with 95% confidence intervals (CI).

3. Results

3.1. Characteristics of women experiencing contraceptive failure

Close to half (43%) of the women reporting contraceptive failure were from one sub-county (Ndhiwa). Similarly, half (50%) of the women experiencing method failure were aged between 20 and 29 years, 6% were aged below 20 years while the rest were aged 30 years and above (**Table 1**). In addition, most of the women (96%) were married as opposed to cohabiting, most (88%) had been married once, and about three-quarters (78%) were living with their partners at the time of the survey. More than half (60%) had completed primary, secondary, or higher level education. More than half (56%) had given birth to four or more children and almost a similar proportion (52%) had four or more living children (**Table 1**).

3.2. Extent of contraceptive failure

Although only about one in five (18%) of the women who were dissatisfied with contraceptive methods mentioned failure as the reason, most of the women reported knowing other friends who got pregnant while on methods. For instance, one woman who got pregnant while on implants reported during interviews that four of her friends who obtained the method from the same health facility on the same day also got pregnant while on the method around the same time that she did. Another respondent who got pregnant while on implants reported that whereas her husband supported and even accompanied her to get the method, he was very disappointed when she got pregnant and did not want to hear about family planning anymore. A woman who got pregnant while on injectables mentioned knowing about 10 other friends who became pregnant while using the method. One who got pregnant while on female sterilization reported that she experienced ectopic pregnancy while on the method, went through Cesarean section, and had to go through another tubal ligation. Another who was on sterilization reported that she had an operation after experiencing ectopic pregnancy, which led to cancer and that she was on treatment for the disease at the time of interview.

3.3. Variations in contraceptive failure

Variations in method failure by type of method showed that it was highest for rhythm (38%), followed by pills (30%), injectables (17%), and withdrawal (15%, **Figure 1**). In contrast, method failure was low for condoms and implants (4% each) while none of the dissatisfied IUD users mentioned failure of the method as a reason. Results not shown indicate that only 62 women reported using female sterilization. Assuming that the four women who mentioned to interviewers that they experienced failure of the method reported correctly, then this represents about 6% of users of female sterilization and 2% of those who reported failure of any method.

Characteristics	Percent	Number of women
Sub-county		
Ndhiwa	42.8	71
Rachuonyo North	32.5	54
Rachuonyo South	24.7	41
Age group (years)		
15–19	6.0	10
20–24	19.9	33
25–29	30.1	50
30–34	28.3	47
35–39	15.7	26
Marital status		
Cohabiting	3.6	6
Married	96.4	160
Highest education level		
None/some primary	40.4	67
Completed primary	34.3	57
Secondary and above	25.3	42
Religious affiliation		
Catholic	10.2	17
Protestant/other Christian	88.0	146
Muslim/other	1.8	3
Number of times married		
Once	88.0	146
More than once	12.1	20
Living arrangement with partner		
Living away	21.7	36
Living with respondent	78.3	130
Children ever born		
0–1	6.6	11
2–3	36.8	61
4–5	33.7	56
6 and above	22.9	38
Number of living children		
0–1	8.4	14

Characteristics	Percent	Number of women
2–3	39.2	65
4–5	36.8	61
6 and above	15.7	26
Total	100.0	166

Table 1. Distribution of contraceptive users who experienced method failure.

Results from the multivariate logistic regression analysis showed that there were statistically significant differences in the likelihood of experiencing contraceptive failure by study site (**Table 2**). In particular, the likelihood of experiencing method failure was significantly lower in Rachuonyo North and Rachuonyo South sub-counties than in Ndhiwa sub-county (OR: 0.61; 95% CI: 0.40–0.92 for Rachuonyo North, and OR: 0.43; 95% CI: 0.28–0.66 for Rachuonyo South). A test of whether the difference between Rachuonyo North and South was statistically significant showed that it was not ($p = 0.13$), indicating that the significant differences were mainly between Ndhiwa and the other two sub-counties. There were, however, no statistically significant variations in the likelihood of experiencing method failure by the other background characteristics considered (**Table 2**).

3.4. Reasons for contraceptive failure

Failure of injectables and pills was partly because of challenges with adherence to the methods. Some women reported that they forgot to return to the facilities for the methods on the dates of appointments. In some cases, they resorted to obtaining the methods from other

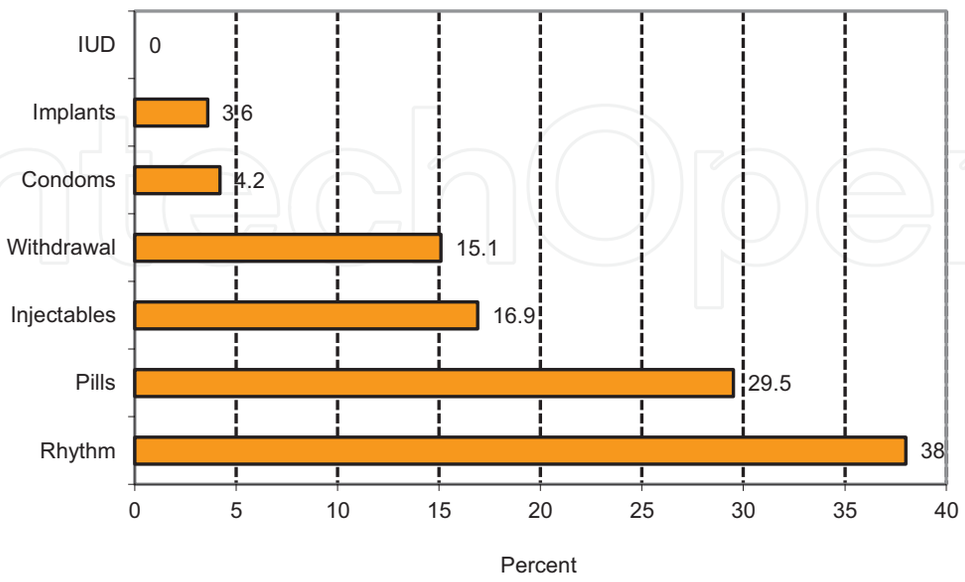

Figure 1. Contraceptive failure by type of method. Note: N = 166.

Covariate	Odds ratio	95% CI
Sub-county (ref = Ndhiwa)		
Rachuonyo North	0.61*	[0.40–0.92]
Rachuonyo South	0.43**	[0.28–0.66]
Age group (25 and above = 1)	1.31	[0.82–2.08]
Education level (ref = None/primary incomplete)		
Primary complete	1.21	[0.81–1.80]
Secondary and above	1.28	[0.84–1.95]
Religious affiliation (Protestant/other Christian = 1)	1.11	[0.64–1.92]
Number of times married (More than once = 1)	1.21	[0.71–2.07]
Living arrangements with partner (Living with respondent = 1)	0.91	[0.59–1.39]
Number of living children (Four or more = 1)	1.19	[0.80–1.77]
Number of women	896	

*$p < 0.05$.
**$p < 0.01$.

Table 2. Odds ratios from multivariate logistic regression model examining variations in the likelihood of experiencing contraceptive failure.

sources such as private pharmacies, community health volunteers or community-based distributors for fear of reprisals from health facility providers because of missed appointments. Some reported that they went back to health facilities even after missing appointments but that they were not screened for pregnancy before being given the methods again, which could suggest that they might have already been pregnant at the time. Some women who were on pills reported that they forgot taking the method on certain occasions, while others suspected that the pills did not dissolve but were instead piling in the stomach. Another participant who was on pills reported using strong antibiotics at the time she got pregnant, which she suspected might have interfered with the efficacy of the method and thus exposed her to the risk of pregnancy.

Reasons for failure of implants and female sterilization—which are highly effective methods and are less dependent on client adherence—were, however, not straightforward. Women who got pregnant while on implants suspected that they were provided with expired commodities. Some reported that the implants might have disappeared in their bodies and thus became less effective. Another who got pregnant while on implants and was HIV-positive reported that she was told by a healthcare provider that antiretroviral drugs (ARVs) may reduce the efficacy of the method and that she suspected that it is what happened in her case. Those who got pregnant while on female sterilization reported that they were told by healthcare providers that the procedure entailed turning the uterus inside out, which made them believe that the process is reversible. In most cases, women reported that they got information about the methods they chose from friends who had used them, and that they were not given

sufficient information about other methods when they sought care at health facilities. Others mentioned the costs associated with obtaining implants (equivalent of $1) as a deterrent to honoring scheduled appointments and ensuring continuous use without interruptions.

4. Discussion

Contraceptive failure occurs to women and couples who are already making efforts to prevent mistimed or unwanted pregnancy. Contraceptive failure is likely to lead to disillusionment with methods or abandonment of contraception, with possible consequences of a rise in unintended pregnancies and the potential for increased incidents of induced abortion, which if conducted in unsafe conditions are likely to contribute to increased incidents of maternal morbidity and mortality [11, 12]. As the results of this chapter show, some study participants who experienced contraceptive failure reported that they or their partners were disappointed that the methods did not work for them. However, the findings indicate that contraceptive failure resulted from deficiencies either on the part of the user or the provider. In particular, failure of methods such as injectables, pills and condoms was mainly due to challenges with adherence (such as not regularly taking pills or not honoring scheduled appointments for injectables) and inconsistency of use (especially of condoms) on the part of the users. The finding suggests the need for expanding the range of contraceptive methods and providing adequate information and counseling for women and couples to enable them make informed decisions regarding methods that are appropriate and easy for them to use.

The findings further show that failure of more effective methods such as implants and female sterilization was partly due to limited provider capacity to offer the methods and partly due to inability to afford the costs of continuing the use of implants. Provider deficiency could be due to lack of appropriate skills, workload or lack of relevant equipment. For instance, the methods require highly skilled personnel to administer that might be lacking in the rural community where the study was conducted. It could also be that even if the providers had the requisite skills, staffing challenges facing lower level facilities especially in remote settings may negatively impact the quality of care provided in such outlets where in most cases, only one or two providers are available to offer all forms of healthcare including curative, preventive, promotive and reproductive health services. Lack of appropriate equipment is another challenge that could impede providers' ability to administer the methods even if they have the relevant skills. Whatever the reason, provider deficiency was evident from women's reports that they got information about the methods from friends who had used them, and that they were not given sufficient information when they sought services at health facilities. The finding suggests the need for addressing health systems challenges that affect the provision of the more effective long-acting and permanent methods such as implants and female sterilization in such rural settings. Although the cost of continuing use of implants also emerged as an issue, the global Implant Access Initiative that aims to make the method available at low cost has enabled family planning programs to increase its availability, which has contributed to increased use of the method in settings such as Kenya [18, 26]. The reach of the initiative might, however, be hampered by uncertainties about its sustainability and

controversies around the association between hormonal contraception and increased risk of HIV acquisition [18, 27, 28].

Previous studies showed that contraceptive failure was more prevalent among younger than older users, which could be an indication of incorrect use of methods among these sub-groups [29, 30]. The findings of this chapter, on the other hand, show that there were no significant variations in reporting contraceptive failure by age among participants in the study. This could largely be due to the study's focus on married or cohabiting women—one of its limitations—which might have left out many unmarried young women at risk of experiencing contraceptive failure. However, evidence on variations in contraceptive failure by level of education is mixed, with some studies finding higher failure rates among less educated than more educated users, while others found no difference between the two sub-groups [29–31]. The findings of this chapter are consistent with those of previous studies that did not find significant differences in contraceptive failure by levels of education. The significant differences in contraceptive failure between sub-counties included in the study are, on the other hand, consistent with those of other studies that found sub-national variations in method failure, which could be an indication of disparities in provision of quality care [29].

5. Study limitations

In spite of the consistency of the findings of this chapter with those of previous studies, they could be affected by the fact that information on contraceptive failure was based on women's self-reports, which could be subject to under- or over-reporting. In strict sense, contraceptive failure refers to the occurrence of a pregnancy during sexual intercourse when contraception is used. It is, however, unlikely that women may precisely determine that a pregnancy occurred during a particular sexual act when she or her partner was using contraception. Some women may also have become pregnant when they were not protected at all due to diminished efficacy of the methods they were using after failing to honor appointments for resupply. In addition, as previously mentioned, the exclusion of unmarried women from the study may result in under-reporting of episodes of contraceptive failure if young women who are likely to be unmarried were at higher risk of experiencing failure than their older married counterparts. Contraceptive failure also came out as an emerging issue during data collection and was not the primary objective of the study that provided data for this chapter. Consequently, some information that could further improve our understanding of the dynamics of contraceptive failure in such contexts was not captured, including the specific user and provider deficiencies that contributed to failure and users' agency after experiencing failure.

6. Conclusion

Although the family planning program in Kenya appears to be doing well at the national level, experiences of women at sub-national levels suggest the need for targeted interventions to address challenges associated with contraceptive failure that might hamper the success of

the program at the local levels. Interventions could include expanding the mix of available methods, provision of adequate information, improving counseling, as well as addressing health system factors that impede the provision of quality care such as limited staff skills, staff availability, inadequate supplies, and lack of or faulty equipment for administering long-acting and permanent methods.

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