

**The Impact of a Reproductive Health
Project Interventions on
Contraceptive Use in Uganda**

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The Impact of a Reproductive Health Project Interventions on Contraceptive Use in Uganda

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Abstract

This study considers whether recent increases in modern contraceptive use in Uganda are likely reflecting the impacts of reproductive health interventions related to health facilities. We employ data from the 1999 Delivery of Improved Services for Health (DISH) Evaluation Surveys, which provide quantitative information on the reproductive health status of individuals and services in the districts served by the DISH project. The surveys consisted of a Household Questionnaire administered to a representative sample of women of reproductive age, and a Facility Questionnaire implemented in all health facilities serving the sampled population. Multivariate logistic regressions were used drawing on both individuals' background characteristics as well as representative characteristics of health facilities to assess the independent impact of the quality of the health service environment on individual-level differences in contraceptive use. After controlling for a number of socio-demographic characteristics, access to a greater choice of family planning supply methods in rural areas remained significantly associated with women's increased usage. A positive association between the number of DISH-trained family planning service providers and contraceptive use was found in urban areas. However unexpected findings of negative associations between certain indicators of programme efforts and actual family planning practices point to the need for a better understanding of any potential targeting of publicly-funded resources.

Introduction

It is widely assessed that the characteristics of individuals, their attitudes and beliefs, conditioned by socio-economic circumstances, shape behaviour in reproductive matters. Less clear is whether governments can further influence behaviour, specifically through the implementation of family planning and reproductive health programmes. Family planning programmes are designed to provide information, supplies, and services for voluntary fertility control via various delivery systems and with the aid of mainly modern methods of contraception. Efforts may involve both public and private channels, more often the former, but with significant and growing emphasis on the latter.

The role of family planning programme effort on individual behavioural outcomes remains a point of debate. On the one hand, such programmes may be seen to legitimise preferences for reduced family size and latent demand for fertility regulation in high fertility societies. Freedman (1) and Bulatao and Lee (2) reason that diffusion of birth control through family planning programmes should help reduce some of the costs of access associated with fertility regulation, both in terms of lower monetary cost of contraceptives as well as relieving some of the psycho-social costs, as imagined risks are gradually replaced by more objective assessments. Ainsworth (3) observed, in an analysis of family planning in Sub-Saharan Africa, that improved availability of services (as evaluated by distance to sources and availability of specific services) was generally associated with higher current contraceptive use.

On the other side is an image of *laissez-faire*, the idea that a country's socio-economic development will be the ultimate factor in fertility decline and contraceptive prevalence ("Look after the people and the population will look after itself"). The case of Brazil is often cited as an example in this context, a country having experienced rapid fertility decline since the late 1960s in the absence of a national family planning programme, but having been marked by rapid urbanisation and industrialisation.

Uganda, located in the Great Lakes region of sub-Saharan Africa, remains a society marked with high fertility and low family planning use. According to the 1995 Demographic and Health Survey (DHS), the national total fertility rate was 6.9 lifetime children per woman, and only 7.4% of women of reproductive age were using a modern contraceptive method (4). With the goal of addressing population and health issues, the Government of Uganda has commissioned numerous family planning and reproductive health projects since 1994. Implemented by various organisations, most have adopted the recommendation of the 1994 International Conference on Population and Development to provide integrated reproductive health services. Among these projects is the Delivery of Improved Services for Health (DISH) Project, which focuses on about 30% of the country's 21 million inhabitants.

The goal of this paper is to assess the independent impact of reproductive health programme efforts on contraceptive prevalence in the target areas of Uganda. Our main data source is the 1999 DISH Evaluation Surveys (DES), which collected information on individual-level family planning knowledge, attitudes and practises as well as facility-level measures of programme inputs. The analysis uses multivariate logistic regressions drawing on both women's background characteristics and representative characteristics of the programme environment. The study will consider whether observed differences in women's use of modern contraceptives are likely reflecting real impacts of selected DISH project interventions or mostly just population structural differences.

The Delivery of Improved Services for Health (DISH) Project

One of the largest reproductive health programmes in Uganda is the Delivery of Improved Services for Health (DISH) project. Funded by the United States Agency for International Development (USAID), through a bilateral agreement with the Ugandan government's Ministry of Health, the project operates in 12 of the country's 45 districts, namely, Jinja, Kampala, Kamuli, Kasese, Luwero, Masaka, Masindi, Mbarara, Nakasongola, Ntungamo, Rakai, and Sembabule. In the first phase of DISH (A), one of the main

aims of the project was to change reproductive-related behaviours by increasing the availability and improving the quality of integrated reproductive health services.

The DISH Evaluation Surveys (DES) were carried out in 1997 and 1999 as part of the monitoring and evaluation component of the project. Results from the surveys show strong increases in use of modern contraceptive methods among women living in the target areas (B) (5). According to the 1999 DES, 20% of women ages 15-49 were currently using modern contraception. While this marked a sharp jump compared to the 1995 prevalence rates of 13%, most of the increase was observed during the first two-year interval 1995-1997. Injectables were the most used method in 1999, followed by condoms and pills. Adoption of long-term contraceptive methods (IUD, implants, and male or female sterilisation) remained low, and usage of other short-term methods (diaphragm, foam, jelly or female condoms) was negligible.

At the same time, DES data on the service delivery environment revealed that not all facilities serving the sampled population provided the full range of reproductive health services. While essentially all public health facilities offered family planning services, approximately a fifth of facilities operated by non-governmental organisations (NGOs) or private agencies did not. In addition, the availability and quality of family planning services offered at facilities varies.

The present analysis assesses the independent impact of the quality of the health service environment on contraceptive practises among women in the DISH project areas. We link independent data on facility-level programme inputs, such as availability of family planning services and supplies, with population-level data in order to better elucidate the effects of programme efforts on reproductive outcomes.

Framework for Measuring Impacts of Family Planning Programme Effort

In various parts of world, patterns of contraceptive use may be a reflection, at least in part, of differential levels of access to family planning programmes. Access can be most easily measured by physical proximity (in time and distance) to services. In this respect, cross-national DHS data on service availability reveals that countries in Sub-Saharan Africa generally have the weakest service environments, while women in Asia, North Africa, and Latin America have relatively ready access to family planning facilities. While proximity may be the most readily quantifiable measure of service availability, many other features could also be employed to evaluate family planning services, such as convenience of access, method choice and costs, quality and skills of staff, outreach to different groups, logistical support, and follow-up care (6)

Based on previous models for fertility regulation, including Bongaarts' model of the proximate determinants of fertility (7) and Easterlin's supply-demand theory of fertility regulation (8), Lapham and Mauldin developed a framework for evaluating the effort of family planning programmes (9). Three components to programme activities were considered: i) policies, resources, and stage-setting activities; ii) service and related activities; and iii) record-keeping and evaluation. The first component referred to activities that governments, and to some degree private organisations, might undertake to underpin, organise, and implement a family planning programme. They included the setting of population-related policies, funding, and other resources related to the provision of family planning supplies and services. Secondly, service and service-related activities were seen as those designed to facilitate access to and use of a variety of family planning methods, such as service delivery, behaviour change communication activities (BCC), training of personnel and supervision. Record-keeping and evaluation were considered an important third component of programme effort, including programme management's use of evaluation findings. The authors' empirical applications seemed to point to a positive correlation between national programme effort and overall contraceptive use.

Jain (10) sought to refine the definition of "quality" of family planning programmes reflecting a series of elements largely identified through field experience as critical to client satisfaction. The goal was to link

the relationships between programme effort, quality of the service experience, and population-level impacts. Six key elements to assess quality were emphasised: choice of contraceptive methods, information given to users, technical competence of service providers, interpersonal relations, mechanisms to encourage continuity, and appropriate constellation of services. These elements were not necessarily considered discrete, but could be interrelated by common background factors and programme policies.

Drawing on such frameworks, we can draw a model for assessing the impacts of the DISH programme efforts related to health facilities on family planning practices in the project districts (Figure 1). Indicators of the quality of the service environment being considered in the present empirical analyses include the situation of health facilities offering family planning services, choice of contraceptive methods, dissemination of information, training of staff and mechanisms for client follow-up. We will investigate which service elements are having the strongest influences on women's use of modern contraceptives, after controlling for background characteristics.

Data and Methods

The 1999 DISH Evaluation Surveys (DES) provide quantitative information on the reproductive health status of individuals and services in eleven of the twelve districts of Uganda served by the DISH project. The surveys consisted of a household module administered to 1766 women aged 15-49, and a facility module implemented in 292 health facilities serving the sampled population (11).

The household module used a two-stage sampling procedure. At the first stage, 73 census enumeration clusters were randomly sampled, in proportion to district population sizes. At the second stage, households were randomly selected within each cluster. Interviews of eligible women were conducted in all the selected households.

The facility module was designed to provide a measure of the service delivery environment for the population surveyed in the household module. All health facilities located within each selected cluster were included, as were all facilities in the two concentric rings of clusters surrounding this index cluster. The final sample represented all health facilities accessible to the residents of the clusters included in the household survey. This included facilities operating under all three main authorities in the DISH districts of Uganda: the government, NGOs, and the private sector.

The availability of the DES offered a valuable opportunity for linking population-based with facility-based data representing the same geographic areas and time frame (C). The datasets were pooled together and multivariate regression models were used to assess the independent impact of the health service environment on women's use of modern contraception. Statistical tests were conducted to assess whether observed patterns among the population were being significantly affected by programme inputs, that is, representing real differences in family planning behaviours to a selected degree of certainty, or whether the trends were simply reflecting effects of other individual characteristics or sampling variability. In addition to indicators of the quality of health services, a number of socio-demographic and cultural variables were included as potential confounding factors: age of the respondent, marital status, parity, ethnicity, place of residence, and educational attainment.

Given the differing levels of aggregation of the data – individual and cluster – the multilevel nature of the regression's error structure must be taken into account. Therefore, a generalised estimating equation was used to evaluate the independent effects of the explanatory variables for hierarchically nested data (D). The models were assigned a logistic link function for binary dependent variables, applied using the *Stata* statistical software package (12). To facilitate interpretation of the results, the estimated coefficients are presented here in terms of odds ratios. A ratio greater than one implies that an individual in the given category would have a greater likelihood of using a modern contraceptive compared with a counterpart in the

reference category, other factors remaining the same. A ratio lower than one suggests lower likelihood, and a ratio equal to one suggests similar likelihood.

Description of variables related to quality of family planning services

Five explanatory variables related to the health service environment were considered in the multivariate models. First, access to family planning services was measured through the number and types of health facilities offering family planning services geographically accessible to the population (that is, located within the given sampling cluster or surrounding rings of clusters). Individuals having access to at least two public health facilities offering family planning services were considered to be living in areas of better choice of access. Likewise, women's access to one or more private facilities and one or more NGO facilities was considered.

The range of contraceptive method choice was assessed according to the availability of short-term and long-term methods to the community. The indicators used were the number of facilities which generally offered all three of the dominant supply methods (pills, condoms and injectables) as well as those offering at least one long-term method (IUD, implants, tubal ligation or vasectomy). Women with a choice of at least two facilities providing the range of short-term methods, and any facility offering a long-term method, were considered as having a better service environment for contraceptive choice.

Dissemination of information to clients was considered through any road visibility of signposts advertising the availability of family planning services at facilities (the "Yellow Flower" or "Rainbow over the Yellow Flower" national logo) (E) or any interior displays of family planning charts or posters. The impact of staff training was assessed through the total number of staff members providing family planning services at accessible health facilities who had been trained under the DISH curriculum. Areas served by a higher number of DISH-trained staff (three or more) were considered to be the focus of

stronger degree of programme interventions. And finally, record-keeping or mechanism for follow-up was evaluated through the maintenance of family planning registers or client cards at any of the local facilities.

Results

Descriptive Analysis

The percentage distribution of rural and urban women by the characteristics of health facilities in their resident communities is presented in Table 1. Almost all women living in rural areas (89%) live in a community that has a public facility that offers family planning services. Fewer rural women have access to other types of health facilities. Just over one-half live in communities with one or more private facilities that offer family planning services and only about one in five live in communities with an NGO-operated facility that offers the same. The distribution of facilities in urban communities is quite different. Less than one-half of urban women live in communities with a public facility that offers family planning services, while most (85%) live in communities with one or more private facility. About one in three urban women live in communities with an NGO facility that offers family planning services. Most women live in communities where at least one health facility (regardless of operating authority) offers the three dominant supply methods (pill, injectable, condoms). In rural areas, 37% of women live in communities with one facility and 52% with two or more facilities that offer these methods. About one-tenth of rural women do not have access to a health facility that offers all three of these methods. Access to the three dominant supply methods is greater for urban women. While 18% live in communities with one facility that offers the pill, injectable, and condoms, 80% live in communities with two or more health facilities that offer these methods. Very few urban women do not have health facilities that offer these methods in their communities.

Fewer women live in communities with a health facility that offers a long-term contraceptive method such as implants, the IUD, or either male or female sterilisation. Only one in six rural women live in communities with a facility that offers long-term methods while one-half of urban women do so.

BCC materials, including visible billboards for family planning or family health services, and family planning posters and flip-charts, were found in most communities. In rural areas, only one woman in ten lives in a community where these items were not present at a health facility, while only a very small percentage of urban women do so. In fact 39% of women in rural areas and the majority in urban areas (78%) live in communities with two or more health facilities displaying these items. These high coverage rates are primarily due to the presence of posters and flip-charts in health facilities, and less to visible family planning or family health logos.

Most women also lived in communities where DISH-trained staff are providing family planning services. In rural areas, about one-half of women live in communities with one or two DISH-trained providers and 39% living in communities with three or more. In urban areas proportions are slightly higher with about one-half of women living in communities with one to two DISH-trained providers and 41% living in communities with three or more. In addition, almost all women live in communities with one or more health facilities maintaining either client registers or cards. In fact, 40% of rural women and 73% of urban women live in communities where there are three or more facilities having these items.

Multivariate Analysis

Table 2 presents the results of the multivariate regression models measuring the effects of the quality of the health service environment on women's use of modern contraceptives, conditioned for individual background characteristics. Separate models are presented for rural and urban women because access to family planning services and the determinants of contraceptive use differ greatly.

After controlling for the effects of socio-demographic variables, the impact of many of the measures of family planning programme quality were not significantly associated with differential contraceptive practices. In rural areas, contraceptive method choice emerged as a notable exception. Women living in rural communities with at least two facilities offering all three of the dominant family planning supply methods (pills, condoms and injectables) were about 70% more likely to be currently using a modern method. While the availability of one or more facilities offering a long-term method was not significantly associated, this is not surprising. Few rural women use long-term methods for family planning. In addition, women may be more willing to travel outside their communities to obtain a long-term method, and access in the immediate vicinity of home may be less important. Other facility characteristics such as the presence of DISH-trained staff, availability of FP signposts and posters, and the maintenance of a client register were not discernibly associated with contraceptive use.

The findings for women living in urban areas were quite different. The presence of one or more private facilities offering family planning services in the community was highly associated with contraceptive use. In fact women living in communities with a private facility were twice as likely to be current users as women not living in close proximity to a private facility. While the presence of two or more facilities offering the three main supply methods had been found to have significant impact on use in rural areas, this measure of contraceptive choice was not significantly associated with use in urban areas. Further analyses of the data showed that, in models that did not contain a variable for the presence of private facilities in the community, there was a significant association between having two or more facilities offering the three dominant supply methods and contraceptive use (results not shown). This indicates that these two factors are highly correlated and the availability of methods is closely linked to the presence of private facilities.

The availability of a facility in the community that offers a long-term method was actually negatively associated with contraceptive use in urban areas. Women may be willing to travel outside of their

communities, particularly in urban areas, to receive long-term methods. Thus, the placement of these facilities may have little impact on contraceptive use in the immediate vicinity of the facility. While not a significant factor in rural areas, the presence of DISH-trained staff is associated with contraceptive use in urban areas. In urban communities where three or more DISH-trained staff was providing family planning services, women were 50% more likely to be using modern contraception. A puzzling finding is that the presence of BCC materials was negatively associated with contraceptive use. One possible explanation is that facilities may be more likely to use BCC materials to promote family planning services in areas where family planning use is low.

As could be expected, several socio-demographic factors exercise important independent effects on the likelihood of a woman's current use of modern contraceptives, and these effects differed somewhat among urban and rural women. Compared to adolescents (ages 15-19), women in older age groups were much more likely to report current contraceptive use, particularly in urban areas. Adolescents may be less likely to practice family planning because they perceive lower risk of pregnancy due to less frequent (or the lack of) sexual activity or lower fecundity. While marital status was not associated with contraceptive use in urban areas, it was a factor in rural areas. Formerly married women were much more likely to be using modern contraception than never married women. Contraceptive use was found to increase with parity among both rural and urban women. Women with one to three children were about twice as likely to report contraceptive use than their counterparts with no children, while those with four or more children were over three times as likely, underlining the motivation for family size limitation. Anecdotal evidence strongly points to the high costs of raising children, especially education, as a factor driving the preference for smaller family sizes in Uganda.

Not surprisingly, better-educated women were significantly more likely to use contraceptives. In urban areas, women with some secondary or higher education were almost three times as likely to use contraceptives as those with no formal education. The effect of education on contraceptive use is

particularly striking among rural women. Women with at least some primary schooling were over four times as likely to use contraceptives as their uneducated counterparts, and those with secondary schooling almost 10 times as likely. Women having more education may better appreciate the health and economic advantages of smaller family sizes, and be more likely to protect themselves from unplanned pregnancy (and also sexually transmitted infections including HIV/AIDS) through modern contraceptive use. Moreover women's education is often presented in the literature as an indicator of socio-economic development. Ethnic differences were also seen with Runyankole women less likely to use contraception than Lugandan and women of other ethnic groups.

Discussion

The goal of this paper was to evaluate the impacts of selected family planning programme interventions in target areas of Uganda on women's use of modern contraceptives, conditioned for individual-level background characteristics. Considered were a number of indicators related to the quality of the reproductive health service environment in the districts served by the Delivery of Improved Services for Health (DISH) project. Data were drawn from the 1999 DISH Evaluation Surveys, which provided information on the characteristics of women and of the health facilities serving the sampled population.

Five indicators related to family planning programme interventions were considered: the situation of health facilities offering family planning services, choice of contraceptive methods, dissemination of information, training of staff, and mechanisms for client follow-up. Contraceptive choice, as assessed through greater access to a range of family planning supply methods (condoms, pills and injectables), was the programme indicator most strongly associated with current contraceptive use in rural areas. This finding confirms the importance of regular supply of a variety of contraceptive methods in promoting and sustaining use of modern family planning methods. It also suggests that demand among women for

contraceptives has been created and, consequently, actual use becomes predominantly dependent on availability of supplies.

While this analysis considered the number of facilities that reported offering the three main methods, there were also considerable stock-outs of contraceptives during the time period in which the survey took place. According to the 1999 DES, almost one in four facilities had a stock-out of the pill, one in five had a stock-out of the injectable, and over one-half had a stock-out of condoms in the month preceding the survey (13). Despite these difficulties, supply generally remained significantly associated with increased contraceptive use. If such stock-outs had led to a decline in contraceptive use among women at the time of the survey, the impact of contraceptive choice on current use would likely have been even greater than revealed by the present findings.

In urban areas, the presence of one or more private facilities offering family planning was the most important characteristics of the service environment. The presence of private facilities appears to increase access the range of family planning supply methods available to women in the community. We also know that this is an environment where there are more informal sources of contraceptives such as pharmacies, drug shops and retail shop outlets. While contraceptive use among women is higher in communities served by private facilities and more informal sources of contraceptive methods, it is not known whether these facilities are creating demand for family planning or simply responding to existing demand.

There is some evidence to suggest that the private and informal sectors are playing a larger role in the provision of family planning services. In a preliminary analysis of the DISH survey data, the percent of women receiving family planning services from a private source was found to have increased from 31% in 1997 to 35% in 1999, while the proportion receiving supplies from a public source declined from 39% to 34% during the same period (14). In another study that focused on the use of reproductive health services offered in the private sector in two urban districts, Kampala and Jinja, the use of family planning

services at private facilities was found to have increased between 1997 and 2000. Meanwhile, there was a flat or declining trend in the provision of family planning services at public facilities, suggesting that clients may be switching from the public to private and informal sectors as a source of family planning services (15).

Two other characteristics of the service environment were found to be associated with contraceptive use, at least in urban areas. Urban women living in a community where three or more DISH-trained staff were providing family planning services were significantly more likely to be using contraception. The presence of DISH-trained staff may be associated with higher quality family planning services that result in greater adoption of contraception and lower discontinuation rates among users. Dissemination of information, measured by the number of facilities displaying a family planning logo by the road side or interior family planning posters/charts versus facilities displaying neither of these materials, had little discernible effect on women's use in rural areas. A surprising finding was that in urban communities where facilities had these materials, women were about half as likely to use contraception. One factor that may explain this finding is that BCC materials may be more likely to be used in facilities located in areas where fewer women are using contraception in order to increase awareness of, and demand for, family planning services.

Mechanism for follow-up of family planning users, measured by the number of facilities that had client records, was not associated with contraceptive use. This is a facility-based system that is found more often in public than in private facilities. As the predominant contraceptive methods used in Uganda are widely available from sources other than the public facilities, any lack of association between the maintenance of client records and quality of care, and thus improved contraceptive practices, may not be surprising.

Conclusions

Of the characteristics of the health service environment discussed in this paper, the availability of family planning methods is the most important determinant of contraceptive use in rural areas. This finding emphasises the importance of eliminating contraceptive stock-outs at health facilities to ensure a continuous supply of the most-used methods. The DISH project positively impacts on contraceptive use through its efforts to ensure regular availability of contraceptives at public facilities.

DISH project interventions, aimed at improving availability and quality of family planning services at public facilities, and their impact on contraceptive use, were the focus of this analysis. However, the main contraceptive methods used in Uganda (pill, injectable, condom) are widely available outside of the public and formal health system, and recent evidence suggests the private and informal sectors are playing an increasing role in the provision of family planning services. It is not surprising, therefore, that few programme inputs were found to impact on contraceptive use, particularly in urban areas. Programme efforts to increase contraceptive use should consider going beyond the public sector to cover the emerging private and more informal sector.

Finally, findings from this paper suggest that the DISH project needs data beyond facility-based information to assess the project's impact on family planning use. A companion analysis using population-based data found that men and women exposed to mass media messages about family planning were more likely to use modern contraception, or to have intentions of using in the near future among non-users (16). While project interventions have contributed to creating a demand for family planning services, the subsequent use of services is not as closely tied to facility-based efforts because the methods being most used do not necessarily require a visit to a health facility.

Footnotes

A. The prime contractor for the first phase of the DISH project (1994-1999) was Pathfinder International. Collaborating partners were the Johns Hopkins University Center for Communication Programs (JHUCCP), University of North Carolina Program for International Training in Health (INTRAH), and E. Petrich and Associates. The DISH project is currently in its second phase (1999-2002), with JHUCCP as prime contractor, and INTRAH and Management Sciences for Health (MSH) as implementing partners.

B. The district of Kasese was excluded from the 1997 and 1999 DES due to fieldwork security concerns. In order to maintain comparability, data from the DHS presented here refer to the DISH project districts excluding Kasese.

C. Fieldwork for the DES household module was implemented in September and early October of 1999, and for the facility module in late October and November. The timing of the facility survey soon after the household survey should minimise any variations compared to a similar situation where the surveys occurred concurrently, as little change in characteristics of facilities is expected in such a short interval

D. The general estimating equation (GEE) is used to control for intra-cluster correlation in population-averaged models. Standard regression models assume that individual observations are independent. However, in two-stage sample surveys such as the DHS and DES, individuals from the same cluster or household are likely to exhibit similar demographic and behavioural characteristics (because of a variety of unmeasured and unmeasurable factors) compared to those selected from different clusters. The GEE allows specification of assumed within-group correlation.

E. The Ugandan family planning logo, the “Yellow Flower”, was launched in January 1994 and is used to advertise the availability of family planning services at health facilities. The “Rainbow over the Yellow Flower” signpost, the national family health logo, was later launched in September 1997 and indicates the availability of a range of reproductive health services. The DISH project has undertaken initiatives to distribute these logos across facilities in project districts.

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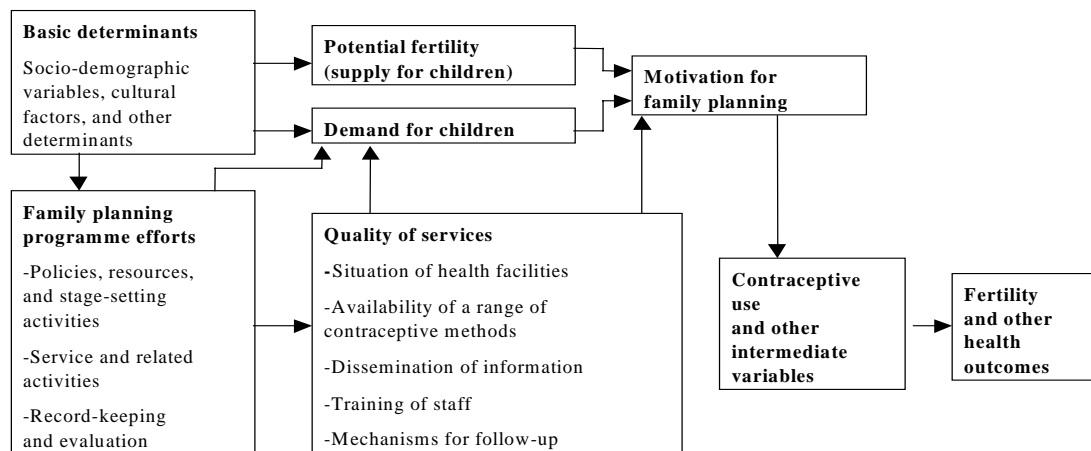
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FIGURE 1: Framework for understanding the role of family planning programme effort on reproductive health outcomes



Adapted from: Lapham and Mauldin 1985; Jain 1990; Bertrand et al. 1996

TABLE 1:
Percent of women living in urban and rural communities by characteristics of the family planning service environment, DISH Districts, 1999.

RURAL (N=1233)		URBAN (N=531)	
Public facilities providing FP Services		Public facilities providing FP Services	
none	11	none	55
1	63	1	36
2+	26	2+	9
Private facilities providing FP Services		Private facilities providing FP Services	
none	38	none	15
1	43	1	17
2+	19	2+	68
NGO facilities providing FP Services		NGO facilities providing FP Services	
none	79	none	67
1+	21	1+	33
Facilities offering 3 main supply methods		Facilities offering 3 main supply methods	
none	11	none	2
1	37	1	18
2+	52	2+	80
Facilities offering a long-term method		Facilities offering a long-term method	
none	83	none	49
1+	17	1+	51
Facilities with FP signposts/posters/charts		Facilities with FP signposts/posters/charts	
none	11	none	3
1	51	1	19
2+	39	2+	78
DISH-trained staff providing FP services		DISH-trained staff providing FP services	
none	16	none	11
1-2	51	1-2	48
3+	33	3+	41
Facilities with FP register/client cards		Facilities with FP register/client cards	
none	11	none	3
1-2	49	1-2	24
3+	40	3+	73

Source: 1999 DISH Evaluation Surveys (figures weighted to account for the two-stage cluster sampling design).

TABLE 2:
Odds ratios from the multivariate logistic regression models measuring effects on women's use of modern contraceptives in urban and rural areas, DISH districts, 1999.

RURAL		URBAN	
Background characteristics		Background characteristics	
Age Group		Age Group	
15-19 (r)	1.00	15-19 (r)	1.00
20-29	1.53	20-29	3.54***
30-39	2.86**	30-39	2.44**
40-49	2.02	40-54	3.21**
Marital status		Marital status	
Never married (r)	1.00	Never married (r)	1.00
Currently in union	0.57	Currently in union	1.09
Formerly in union	0.30**	Formerly in union	0.68
Parity		Parity	
No children (r)	1.00	No children (r)	1.00
1-3 children	2.57**	1-3 children	2.18**
4 or more children	3.37**	4 or more children	3.37**
Ethnicity		Ethnicity	
Luganda	0.71	Luganda	1.41**
Runyankole	0.54**	Runyankole	0.98
Other (r)	1.00	Other (r)	1.00
Education		Education	
No education (r)	1.00	No education (r)	1.00
Some primary schooling	4.64***	Some primary schooling	1.37
Some secondary or over	9.91***	Some secondary or over	2.85**
Characteristics of health facilities: service environment		Characteristics of health facilities: service environment	
Situation of local facilities		Situation of local facilities	
At least 2 public facilities offering FP services	1.25	At least 2 public facilities offering FP services	0.97
One or more private facilities offering FP serv.	0.84	One or more private facilities offering FP serv.	2.08**
One or more NGO facilities offering FP services	1.18	One or more NGO facilities offering FP services	0.96
Less range of access choice for FP services (r)	1.00	Less range of access choice for FP services (r)	1.00
Contraceptive choice		Contraceptive choice	
2+ facilities offering 3 main supply methods	1.70*	2+ facilities offering 3 main supply methods	1.22
At least 1 facility offering long-term method	0.95	At least 1 facility offering long-term method	0.59**
Less of choice for range of FP methods (r)	1.00	Less range of choice for FP methods (r)	1.00
Dissemination of information		Dissemination of information	
FP signposts/posters/charts at facility	0.77	FP signposts/posters/charts displayed in facility	0.54*
No dissemination displays at any facility (r)	1.00	No dissemination displays at any facility (r)	1.00
Training of staff		Training of staff	
3+ DISH-trained staff providing FP services	0.78	3+ DISH-trained staff providing FP services	1.68**
Fewer trained staff (r)	1.00	Fewer trained staff (r)	1.00
Mechanisms for follow-up		Mechanisms for follow-up	
FP register/client cards at facility	0.73	FP register/client cards at facility	1.25
No facility maintaining register/client cards (r)	1.00	No facility maintaining register/client cards (r)	1.00

* p<0.10 ; ** p<0.05 ; *** p<0.001 (r) = reference category

Source: 1999 DISH Evaluation Surveys.