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JANUARY 2009

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2004 KENYA SERVICE PROVISION ASSESSMENT SURVEY

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ABSTRACT

This study focused on factors associated with the readiness of Kenyan health facilities to provide quality and appropriate care to family planning clientele; the degree to which health care providers foster informed selection of an appropriate contraceptive method; and the extent to which clients perceive services to be of high quality. Data was obtained from the 2004 Kenya Service Provision Assessment. The composite indicators scores for facility readiness were generally low and many facilities lacked simple items like visual aids, guidelines, towels, speculum, etc. There were marked differences in facility readiness by region, facility type, and managing authority. Provider service provision scores were generally high but the only important difference was by region. Client satisfaction was dependent on the facility type, managing authority, sex of the provider, and the waiting time to receive services. Clients were more likely to be satisfied with female rather than male providers. Clients were less satisfied in Nyanza, although the facilities were more ready with high-performing providers. In contrast, North Eastern Province had less ready facilities, but high client satisfaction and high provider performance. Health centre, clinics, and dispensaries need to be revamped to appropriate standards so as to include all basic elements of family planning service provision. North Eastern Province, with motivated workers, highly satisfied clients but poor facilities, deserves proper attention. Facilities in Nairobi need improvements in staff supervision and retraining. There is need to educate the clientele on the availability of appropriate services within the government facilities.

INTRODUCTION

Unmet need for contraception can be understood as a rights-based measure of family planning, that is, the degree to which individuals are able to translate their fertility preferences into action by ensuring that births occur by voluntary and informed choice. Reducing unmet need has been a priority in Kenya since the 1994 International Conference on Population and Development (ICPD) in Cairo, and the country has made major gains over time in the use of contraceptives, leading to a large and rapid decline in fertility in the early 1990s. However, contraceptive prevalence rates plateaued in the last decade at 39 percent (32 percent modern methods), while the level of unmet need increased slightly to 24 percent and the proportion of demand satisfied remained at 63 percent, leading to high levels of unplanned pregnancies (Muga et al., 2005; CBS, 2004).

Unmet need results from growing demand in the face of service delivery constraints including poor quality of care, lack of support for contraceptive use from communities and spouses, misinformation, financial costs, and transportation restrictions. Within the context of service delivery, quality of care is particularly important: services must be appropriate according to both health standards and client expectation, method choice must be demand-driven rather than supply-driven, and clients must perceive the services to be of good quality in order to increase uptake of contraceptive methods and aid women in continuing the use of their method while they are still in need of contraception (Jain, 1989; Magadi and Curtis, 2003, Blanc et al., 2002, RamaRao et al., 2003). We present this concept graphically in Figure 1.

Figure 1. Relationship between quality of health care to client uptake and continuation of appropriate contraceptive methods

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│                                                                           │
│   ┌──────────────────────────┐       ┌──────────────────────────┐        │
│   │  Facility readiness to   │       │  Provider willingness and │       │
│   │  provide quality health  │       │  ability to foster        │       │
│   │  services                │       │  informed method selection│       │
│   └──────────────────────────┘       └──────────────────────────┘        │
│                          │                                                │
│                          ▼                                                │
│                 ┌──────────────────┐                                      │
│                 │ Client perception │                                     │
│                 │    of quality     │                                     │
│                 └──────────────────┘                                      │
│                          ┆                                                │
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│              ┌──────────────────────────┐                                 │
│              │      Client uptake and   │                                 │
│              │     continuation of      │                                 │
│              │        appropriate       │                                 │
│              │    contraceptive method  │                                 │
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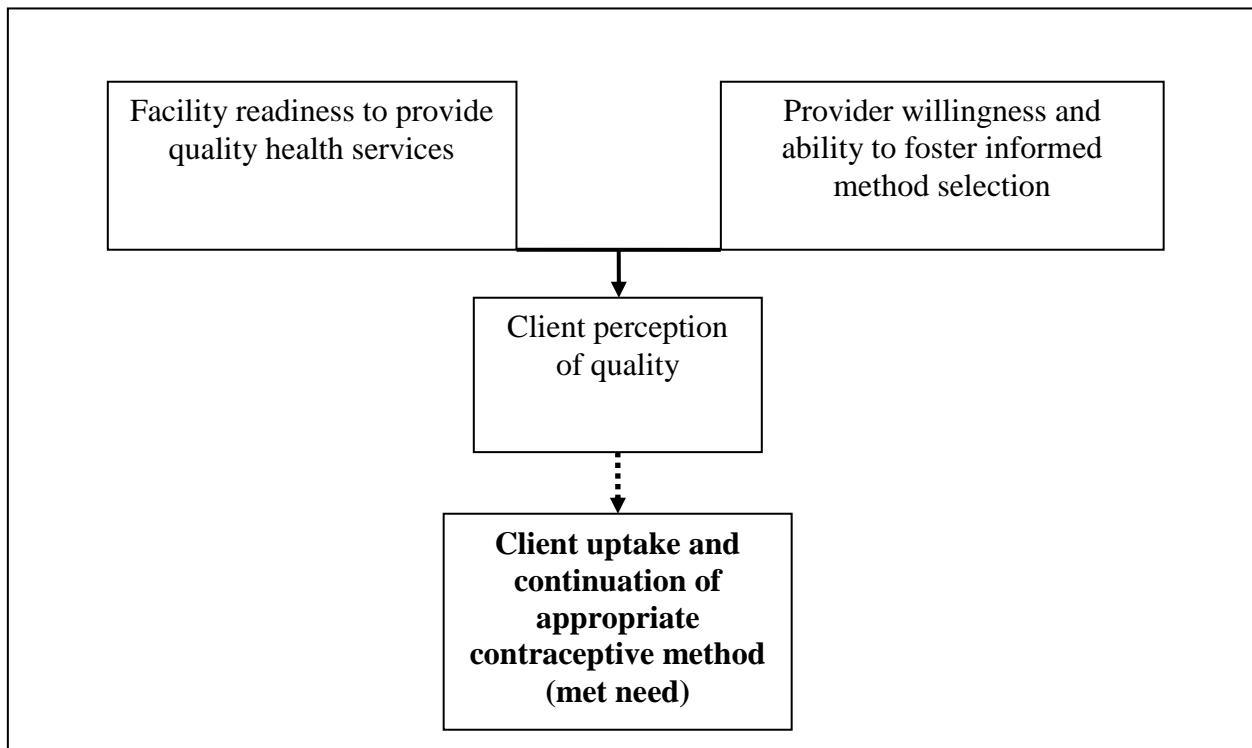
The purpose of this paper, therefore, is to describe the family planning service delivery environment in Kenya, with a particular focus on quality of care and client satisfaction, in order to discern the degree to which service delivery constraints stand in the way of further reductions in unmet need. Given our conceptual understanding of how the quality of the provision of health care can affect client perceptions of services, which in turn affect method uptake (Figure 1), our research seeks to identify the factors associated with the readiness of Kenyan health facilities to provide quality, appropriate care to those seeking contraceptive services, as well as the degree to which health care providers foster informed selection of an appropriate contraceptive method. We then turn to an examination of the extent to which clients perceive services to be of high quality.

BACKGROUND

Improving quality of care has been a necessary goal for family planning programmes worldwide. This increased interest has been accompanied with efforts to monitor quality of care at every level of service delivery (Williams et al., 2000). The seminal work of Bruce (1990) provided a basic framework and a point of reference for studying quality of care in family planning service delivery. The framework included a set of six core elements: choice of methods, information given to clients, technical competence of the provider, client–provider interpersonal relations, mechanisms to ensure follow-up and continuity, and the appropriate constellation of services. Comprehensive and quality family planning service provision must include an assessment of the needs of clients, a range of available methods, and the provision of complete and accurate information about all methods offered, thus ensuring informed choice. Providers should have the necessary technical skills to offer the methods safely, be trained in technically accurate and culturally appropriate counselling techniques, and be able to use this knowledge effectively. Services should be convenient, accessible and acceptable to clients. In addition, it is essential to provide follow-up care to ensure continuity of services and an adequate logistics system to ensure continuity of supplies (Bruce, 1990; Kumar et al., 1989). In this section, we discuss findings in two areas related to these core elements: facility readiness to provide quality services, and health care provider facilitation of informed method choice. We also review the literature on client satisfaction and its relationship to contraceptive use and continuation.

Facility Readiness to Provide Quality Services

It is evident that family planning programmes lacking adequate infrastructure, supplies, and trained personnel may not provide good quality of care (RamaRao and Mohanam, 2003). Factors influencing facility readiness may range from system-wide targeted interventions, such as public and private investments in family planning service delivery; management and training of the required personnel, health system laws, and regulations including standards and guidelines.

RamaRao et al. (2003) indicated that a number of authors frequently used readiness of facilities to provide services interchangeably with quality of care, although the two concepts are distinct. RamaRao et al. (2003) define facility readiness as being the measure of factors that promote delivery of good quality services, such as the availability of infrastructure equipment, supplies, and trained staff; quality of care refers to the user's experience when receiving the service. Although readiness of health facilities to provide quality services has been linked with specific contraceptive behaviour such as adoption, continuation, and switching (Hotchkiss et al., 1999; Steele et al., 1999), research on these issues has not been conclusive (RamaRao and Mohanam, 2003; Mensch et al., 1996; Magnani et al., 1999). However, the effect of quality of care on clients' behaviour is well agreed upon–-perceptions of quality guide reproductive and contraceptive behaviour of individuals. Individuals are more likely to use family planning or modern contraceptives if they perceive the services to be of good quality. Likewise, perceptions of poor quality are likely to dissuade them (RamaRao and Mohanam, 2003).

Provider Ability to Foster Informed Contraceptive Choice

Providers of reproductive health information and services are critical conduits through which clients obtain family planning information and counselling, upon which basis clients may make informed decisions about contraceptive use (Abdel-Tawab and Roter, 2002). Lantis et al. (2002) noted, in a comprehensive review of the literature, that providers figure prominently in determining the quality of family planning services. However, provider behaviour may also be influenced by facility readiness, knowledge gaps, community myths, and insufficient skills. Further, medical barriers and practices may limit provider interaction with the client, thus limiting the provider's ability to provide appropriate services (Speizer et al., 2000). Early studies in Jamaica and the United States suggest that the preferences of providers are also important determinants of the contraceptive methods that are prescribed or made available to clients (Bailey et al., 1995; McDonald et al., 1995; Weeks, 1993).

Several barriers may also limit providers' ability or willingness to provide quality care. Knowledge gaps, including both community myths and insufficient knowledge and skills among providers, represent one type of barrier (Best, 2002). Other factors include medical barriers and practises based on medical rationales that limit clients' access to contraception (Shelton et al., 1992; Speizer et al., 2000). For example, an examination of quality of care in five African countries by Miller et al. (1998) showed that a large proportion of providers imposed restrictions on family planning based on client characteristics such as age, marital status, spousal consent and number of children. On the other hand, some providers may believe that they are in a better position to choose the most appropriate method for the client while others may be biased toward certain methods, and hence preclude the client from choosing his or her own method (Creel et al., 2002; Speizer et al., 2000).

Studies have also reported that social distance between providers and clients limits quality interactions between the two (Rutenberg and Watkins, 1997). An earlier study in Kenya suggested that providers were more likely to provide information on contraceptive side effects to older or better educated clients (Ndhlovu, 1995). Other reports indicated that some facilities tended to focus services on older, usually married, women more than on first users who were likely to be young and unmarried (Potts et al., 1998; UNFPA, 1994). Schuler and Hossain (1998), in a study of family planning clinics in rural Bangladesh, reported that some providers appeared to selectively apply interpersonal skills and common courtesy.

Client Satisfaction

The quality of care, whether measured according to objective standards or from the perspectives of clients or providers, is believed to influence reproductive health outcomes through improved client satisfaction and contraceptive use behaviour (Williams et al., 2000; Blanc et al., 2002; RamaRao et al., 2003; Steele et al., 1999). Client opinion, especially satisfaction with services, is a subjective way of measuring quality of family planning services. Satisfied clients are more likely to re-visit the services, pass on positive messages by word of mouth to others, and continue use of a particular family planning method (Rutenberg and Watkins, 1997). On the other hand, dissatisfied clients are more likely to share their negative experiences with others and are less likely to return or continue use of family planning services (Williams et al., 2000).

Clients' perceptions are shaped by their cultural values, previous experiences, and interactions with providers and the health care system. These perceptions may vary depending on the contextual factors; nevertheless, some commonalities also exist as core elements of quality of care (Creel et al., 2002; Kelley and Boucar, 2000). One such common factor is the waiting time

to receive services. Williams et al. (2000), in a study of eight Latin American and Caribbean countries using client exit interviews, revealed that almost three quarters of clients were dissatisfied with waiting time to obtain services. Also, about half of the clients were dissatisfied with ease of reaching service delivery and about half with the price of services.

A study conducted by Ndhlovu (1995) in Kenya reported that clients viewed low costs and proximity of services as the two most important factors that attracted them to services. However, a study in Bangladesh indicated that families tend to spend money on health care only in a crisis situation. Other health issues, such contraceptive side effects and related problems, are rarely seen as emergencies and are therefore given low priority (Schuler et al., 2001). Nevertheless, there are instances where clients may be willing to pay higher costs if they believe that services are of high quality (Sadasivam, 1995).

DATA AND METHODS

Data

This analysis uses data from the 2004 Kenya Service Provision Assessment (KSPA). The 2004 KSPA obtained information from a sample of 440 facilities, out of a total facility population of 4,742 facilities. These facilities included hospitals, health centres, dispensaries, maternity homes, and clinics. In addition, standalone facilities offering mainly services for voluntary counselling and testing for HIV (VCT) and antiretroviral (ARTs) were included in the sample. All the facilities included in the sample were randomly sampled except for the 2 referral and 8 provincial hospitals in the country. These 10 facilities were sampled to ensure both national and provincial representation. The final sample size of 453 facilities was selected to account for logistic considerations. The 2004 KSPA, which provides national and provincial level information on all types of facilities, collected information on child health, maternal health, family planning, and infectious disease using a variety of data collection methods.

The data used in this study come from facility inventories, the family planning observation protocol, and family planning client exit interviews. A detailed description of the data collection methods used is given in the 2004 KSPA. The sample size used in the analysis excludes standalone facilities, which were mainly added to account for information pertaining to voluntary counselling and testing.

Methods

In this section we first describe our dependent and independent variables. We then describe our approach to the analysis of each dependent variable.

Dependent Variables

Facility Readiness: Assessment of the Extent to Which the Facilities Are Ready to Provide Services According to Expected Standard. At the facility level, appropriate service provision encompasses a variety of critical elements. Following the approach of Hong et al. (2006), we consider four loci where appropriateness of service provision may be assessed: the counselling environment, the examination room, method availability, and management practices (see Table 1). To incorporate all of the relevant elements into a single variable, we created a composite score reflecting each facility's ability to provide appropriate family planning services. For each item, the score represents the weight given to the aspect of each dimension. For example, in the counselling dimension, the presence of guidelines or protocols on counselling will be given the weight of 25/4 if available and 0 if unavailable. Similarly, under the examination room category, a private room that ensures visual and auditory privacy is given the weight of 25/11 if present in a facility and 0 if not. The total composite score reflects the readiness of a facility to provide appropriate quality services to clients. The scores were subsequently divided into three categories (high, medium, or low).

Table 1. Dimensions and items in the readiness index of family planning services, Kenya SPA 2004

Quality dimension and item	Definition of item	Score (weight for presence in the facility)	Percent of facilities where item was observed
1. Counselling		25	
Guideline	Guidelines or protocols on counselling	25/4	13
Privacy in counselling room	Private room that ensures visual and auditory privacy	25/4	65
Visual aids	For demonstrating the use of family planning methods	25/4	62
Individual client card	Individual client card or record or chart for family planning	25/4	58
2. Examination room		25	
Privacy in examination room	Private room that ensures visual and auditory privacy	25/11	61
Examination table/bed	Table or bed for examination such as pelvic examination	25/11	74
Source of light	Examination light including spot light	25/11	17
Speculum	Vaginal speculum for pelvic examination	25/11	14
Soap	For hand washing	25/11	54
Water	For hand washing (tap water or bucket with tap)	25/11	68
Gloves	Clean (disposable or sterile) latex gloves	25/11	71
Decontamination solution	Mixed solution for hand decontamination	25/11	39
Sharp box	For disposing of used sharp objects (i.e., used needles)	25/11	70
Towel or drier	Presence of towel or drier in the unit/facility offering family planning	25/11	5
Blood pressure (BP) machine	Availability of BP machine	25/11	59
3. Supply of contraceptive methods		25	
Oral contraceptives	Combined or progesterone-only pills	25/5	67
Injectables	Combined or progesterone-only injection	25/5	67
Condoms	Male condoms	25/5	64
Implants	Norplant or Implants	25/5	10
IUDs	Intrauterine devices	25/5	21
4. Management		25	
≥ 25% of staff received training	In-service training in any family planning topic in past year	25/3	12
≥ 50% of staff received supervision	Receiving personal supervision in past 6 months	25/3	34
Having up-to-date registration	Having a recorded register up-to-date in last 7 days	25/3	57
Total		100	N = 430

Appropriateness of Method Choice/Informed Consent: Assessment of Provider Actions. Provider behaviour is important to the provision of quality services even if the facility has the right infrastructure. For provider behaviour, we focus on the items that were observed for each provider during client consultation (Table 2). The scores obtained from the observations of each provider were summed to obtain a score for each individual. Thus, a provider consultation with an excellent consultative process would obtain a maximum score of 7 while a consultation with the lowest score would be given a zero. As in the case of facility readiness, the scores were divided into three categories for high, medium, and low performance scores.

Table 2. Items in the provider observation assessment index, Kenya SPA 2004

Components of consultation	Score	Percent of client-provider interactions where component was observed
Visual privacy assured	Equals 1 if observed, 0 otherwise	87
Auditory privacy assured	Equals 1 if observed, 0 otherwise	83
Client assured orally of confidentiality	Equals 1 if observed, 0 otherwise	41
Client asked about concerns about methods discussed or used	Equals 1 if observed, 0 otherwise	69
Provider wrote on the client card	Equals 1 if observed, 0 otherwise	95
Provider used visual aids	Equals 1 if observed, 0 otherwise	15
Provider discussed return visit	Equals 1 if observed, 0 otherwise	92
Total score for all the items	7	N = 537 (weighted)

Client Perceptions: Assessment of Client Reactions to the Services Provided. The literature indicates that among the important factors affecting satisfaction are waiting times to receive services, convenient working hours, and cost. Clients prefer facilities where providers discuss their issues or problems, ensure confidentiality, and are private. A battery of questions on these topics was asked of a sample of family planning clients present at Kenyan health facilities on the day of the survey. These items are indicated in Table 3 below. The client satisfaction score was obtained from the cumulative sum of these responses based on whether the client reported no problem with the issue or not. The minimum score was 0 if the client reported having a problem with all of the issues and the maximum score was 12 if the client had no problem at all (completely satisfied). The scores were further divided into three categories, as in the case of provider behaviour and facility readiness.

Table 3. Items for client satisfaction with quality of family planning services at facilities, Kenya SPA 2004

Item	Score	Percent of observations
Waiting time	1 if no problem, else 0	68
Discuss problems about health concerns	1 if no problem, else 0	90
Explain problem or treatment	1 if no problem, else 0	88
Quality of examination or treatment provided	1 if no problem, else 0	91
Privacy from others seeing the examination	1 if no problem, else 0	88
Privacy from others hearing consultation or discussion	1 if no problem, else 0	89
Availability of medicines or methods	1 if no problem, else 0	74
Hours of service at facility	1 if no problem, else 0	89
Days of services available at the facility	1 if no problem, else 0	91
Cleanliness of the facility	1 if no problem, else 0	91
Staff treatment	1 if no problem, else 0	92
Other problems	1 if no problem, else 0	92
Total score for all the items	12	N = 537 (weighted)

Independent Variables

Facility Readiness. In order to examine the variation in facility readiness to provide services, the independent variables include the region where the facility is located, the type of facility, and the managing authority. The region represents a variety of factors such as public differential investments in facilities and operation in different cultural and social contexts, while the managing authority represents not only different management systems but also the different costs of providing service. For example, a public service environment is subsidized by taxation, whereas a private organisation may charge the full cost of service. The cost element, therefore, results in different workloads for service providers, with public service providers having higher workloads and also being more likely to provide services to clientele from various social and economic strata.

Appropriateness of Method Choice/Informed Consent: Assessment of Provider Actions. For provider observation, the key independent variables were region where facility is located, type of facility, and client characteristics (age and level of education). As in the case of facility readiness, the inclusion of region represents a variety of factors ranging from socio-cultural to socio-political influences on provision of family services. The literature also indicates that providers' ability to provide quality care is influenced by factors such as local customs and traditions, the strength of the facility, and the health care system in which they work (Lantis et al., 2002). Therefore, the independent variables include facility type, managing authority, and sex of the provider, in addition to region. The other factors are client characteristics, mainly educational background and age. An earlier study in Kenya (Ndhlovu, 1995) indicated that providers tended to serve educated clients better while other studies revealed the selective treatment of clients according to age.

Client Satisfaction. The clients' level of satisfaction depends on the local environment as well as interaction with the health systems. Therefore, variables include region, facility type, and managing authority. On the other hand, the managing authority may be a proxy for cost, as public health care is subsidized while the private health care system in Kenya charges full cost. The other factors included are the individual characteristics (age and level of education). In addition, some studies have noted the selective provision of family planning services by age and

marital status (Potts et al., 1998; Schuler and Hossain, 1998; UNFPA, 1994). Similarly, level of education may empower the client to demand better services from the provider. An indicator of whether the provider discussed other methods of family planning was included to act as a proxy for providing informed choice as well as provider-client interaction. An evaluation study of the quality of family planning services in eight developing countries conducted by UNFPA indicated that clients openly expressed their preference for female providers (UNFPA, 1994). Therefore, we include the sex of the provider as one of the independent variables. Finally, the waiting time to receive services is included because this is the one factor noted to influence the level of satisfaction (Williams et al., 2000).

Analytical Approach

Bivariate Analysis. The first level of analysis was the cross-classification of the dependent variables with each of the independent variables. The mean scores were of each of the dependent variables by respective independent variables as a measure of the level of facility readiness, provider service provision, and extent of client satisfaction.

Multivariate Analysis. Each of the dependent variables is polytomous since the outcome falls into three categories: high, medium, or low. A more appropriate model for analysis is ordinal regression, often referred to as the ordered response model. The model uses the cumulative response probabilities Yij = Pr(Y< j) rather than category probabilities for simplicity (McCullagh and Nelder, 1989) and in its most general form is written as:

Link $Y_{ij} = \{\theta j - [\beta_1 X_{i1} + ... + \beta_p X_{ip}]\} / exp[\tau_1 Z_1 + ... + \tau_m Z_m]$

Y_{ij} is the cumulative probability of the jth category for the ith case.

θ_j is the threshold parameter sometimes referred to as the cut off parameter for the jth category.

$X_{i1} ... X_{ip}$ are predictor variables that influence the response variable.

$\beta_1 ... \beta_p$ are the regression coefficients that account for the linear differences in the response variable (location components).

$Z_1 \ldots Z_m$ are predictor variables that influence the dispersion of the response variable (scale component).

$\tau_1 \ldots \tau_m$ are the scale coefficients that account for the differences in variability.

Rather than predicting the cumulative probability, however, the model predicts a function of those values often called the link function. The link function chosen depends on the nature of the distribution of the response probabilities (McCullagh and Nelder, 1989). If the response probabilities are uniformly distributed then the suitable link function is the logit link written as $\log \gamma_{ij}/(1- \gamma_{ij})$. For responses that may be skewed, other forms of link functions may be chosen (McCullagh and Nelder, 1989). The location parameter coefficients (β_i) influence the likelihood of being in a higher/lower category given a change in the location independent variable X_i constrained by the scale parameter. The coefficients in the scale component account for the differences due to variability. The cut off parameters are not interpreted but are used to compute the cumulative probabilities.

RESULTS

Descriptive Results

Facility Readiness

Table 4 indicates the distribution of facility variables by counselling dimension (characteristics as per Table 1) of the facility readiness. The results show that there are no differences by the facility's regional location or by type of facility. North Eastern Province had no facility in the category of high scores although the number of facilities in the sample was small. Overall government facilities are more likely to have been better prepared to provide counselling services.

Table 4. Percent distribution of background variables by counselling dimension of facility readiness

Facility characteristics	Percent in category			Number (N)
	Low	Medium	High	
Region				
Nairobi	57%	35%	8%	37
Central	47%	51%	2%	49
Coast	56%	29%	15%	48
Eastern	47%	42%	11%	81
North Eastern	75%	25%	0%	8
Nyanza	43%	43%	15%	54
Rift Valley	57%	36%	7%	124
Western	38%	55%	7%	29
Pearson Chi square= 18.083 P=0.203				
Facility Type				
Hospital	45%	38%	17%	29
Health centre	42%	47%	10%	125
Clinic	63%	25%	13%	8
Dispensary	54%	38%	8%	248
Maternity	60%	35%	5%	20
Pearson Chi square= 9.008 P=0.342				
Managing Authority*				
Government	39%	50%	11%	245
Non-government	67%	27%	7%	185
Pearson Chi square= 31.741 P< 0.01				
Total	**51%**	**40%**	**9%**	**430**

Table 5 shows the distribution according to the examination room dimension. There are clear differences by all the facility characteristics (region, type, and the managing authority). North Eastern province again scored poorly, as in the case for counselling. Although Nyanza and Western provinces do have a lower proportion of facilities with high scores, the distribution is quite different, as many of the facilities in these regions are within the category of a medium level of facility readiness. Similarly, the dispensaries and clinics had low scores for this aspect of the readiness index. It is evident from Table 1 that the majority of the facilities lacked simple items for conducting an appropriate examination. In particular, many facilities did not have a source of light, all sizes of speculum, soap, decontamination solution, and towels and/or a drier (5 percent).

Table 5. Percent distribution of background variables by examination dimension of facility readiness

Facility characteristics	Percent in category			Number (N)
	Low	Medium	High	
Region*				
Nairobi	58%	28%	14%	37
Central	42%	40%	18%	49
Coast	59%	25%	16%	48
Eastern	41%	46%	13%	81
North Eastern	75%	25%	0%	8
Nyanza	39%	54%	7%	54
Rift Valley	57%	32%	11%	124
Western	43%	50%	7%	29
Total	**50%**	**38%**	**12%**	**429**
Pearson Chi square= 23.129 P<0.1				
Facility Type***				
Hospital	36%	25%	39%	28
Health centre	57%	33%	10%	125
Clinic	57%	29%	14%	7
Dispensary	49%	43%	8%	249
Maternity	47%	32%	21%	19
Total	**50%**	**38%**	**12%**	**428**
Pearson Chi square= 28.750 P<0.01				
Managing Authority**				
Government	47%	43%	10%	245
Non-government	54%	32%	14%	186
Total	**50%**	**38%**	**12%**	**431**
Pearson Chi square= 6.234 P< 0.05				

Contraceptive supplies are the key commodities required for family planning. Table 6 shows the extent to which facilities had all the required methods by facility characteristic. A high score indicates the facility had nearly all the types of contraception available while a low score means two or fewer commodities were present at the facility. Availability differs by facility type, location of the facility, and the managing authority. North Eastern province again has few facilities that had all the methods available.

Table 6. Percent distribution of background variables by supplies of contraceptive commodities dimension of facility readiness

Facility characteristic	Percent in category			Number (N)
	Low	Medium	High	
Region*				
Nairobi	51%	11%	38%	37
Central	30%	44%	26%	50
Coast	33%	48%	19%	48
Eastern	40%	26%	34%	80
North Eastern	50%	38%	13%	8
Nyanza	20%	57%	22%	54
Rift Valley	36%	44%	20%	124
Western	24%	48%	28%	29
Total	**34%**	**40%**	**25%**	**430**
Pearson Chi square= 33.832 P< 0.01				
Facility Type*				
Hospital	29%	11%	61%	28
Health centre	23%	38%	39%	126
Clinic	38%	38%	25%	8
Dispensary	41%	47%	12%	249
Maternity	25%	20%	55%	20
Total	**34%**	**40%**	**25%**	**431**
Pearson Chi square= 67.155 P<0.01				
Managing Authority*				
Government	18%	50%	31%	245
Non-government	56%	27%	17%	185
Total	**35%**	**40%**	**25%**	**430**
Pearson Chi square= 66.685 P< 0.01				

Key: P< 0.01 ***, P< 0.05 **, P< 0.1 *

Regarding management, few facilities have recently trained staff on family planning provision, and in only a third of the facilities did staff have any supervision (see Table 1). Table 7 shows the distribution by facility characteristics for this dimension. In 4 out of 8 provinces no facility had a high score. Nairobi, with the highest number of facilities falling in the low category, was the lowest scoring region. Comparing the scores by facility type shows the direct opposite of the other dimensions. It appears that key aspects of management are present at health centres and clinics, but not at hospitals.

Table 7. Percent distribution of background variables by management dimension of facility readiness

Facility characteristic	Percent in category			Number (N)
	Low	Medium	High	
Region***				
Nairobi	92%	8%	0%	37
Central	55%	29%	16%	49
Coast	73%	27%	0%	48
Eastern	74%	16%	10%	81
North Eastern	75%	25%	0%	8
Nyanza	54%	46%	0%	54
Rift Valley	73%	21%	6%	124
Western	45%	48%	7%	29
Total	**69%**	**26%**	**6%**	**430**
Pearson Chi square= 52.969 P< 0.01				
Facility Type				
Hospital	89%	11%	0%	28
Health centre	64%	26%	10%	126
Clinic	75%	13%	13%	8
Dispensary	67%	28%	5%	249
Maternity	80%	15%	5%	20
Total	**68%**	**26%**	**6%**	**431**
Pearson Chi square= 12.519 P= 0.13				
Managing Authority***				
Government	58%	34%	8%	245
Non-government	83%	14%	3%	185
Total	**69%**	**26%**	**6%**	**430**
Pearson Chi square= 29.963 P< 0.01				

In summary, the key differentials occur in three main dimensions of readiness index: examination room, supplies of commodities, and the management of the services. Table 8 shows the distribution of the facilities by overall readiness score index. Only 9 percent of the facilities fell in the high category, while one in three of the facilities had a low score. Western and Central provinces had the highest number of facilities with high overall index scores, while North Eastern province had no facility in the high category. The second-to-last column shows the mean score by each characteristic. The mean score can be regarded as the measure of readiness to provide quality services. Nairobi and North Eastern provinces scored lowest and were far below average, followed by Rift Valley province. The highest scores are in Nyanza and Western provinces. As expected, hospitals are much more ready to provide family planning services while health centres, surprisingly, appear to be better equipped. The government facilities were much more ready to provide the services while, rather surprisingly, the non-government facilities are well below the average score.

Table 8. Percent distribution of facilities by variables and overall facility readiness index

Facility Characteristic	Percent in category			Mean score	
	Low	Medium	High	(Range 0-100)	Number
Region**					
Nairobi	51%	46%	3%	31.3	27
Central	30%	56%	14%	48.6	50
Coast	29%	63%	8%	42.9	49
Eastern	36%	53%	11%	45.4	81
North Eastern	50%	50%	0%	32.1	8
Nyanza	13%	76%	11%	53.7	54
Rift Valley	42%	51%	7%	40.4	123
Western	24%	62%	14%	50.5	29
Total	34%	57%	9%	43.7	431
Pearson Chi square= 25.594 P< 0.05					
Facility Type**					
Hospital	29%	50%	21%	50.9	28
Health centre	18%	74%	7%	50.5	125
Clinic	50%	38%	13%	37.6	8
Dispensary	43%	49%	9%	39.7	248
Maternity	30%	55%	15%	49.5	20
Total	34%	57%	9%	43.7	429
Pearson Chi square= 31.751 P< 0.01					
Managing Authority**					
Government	18%	71%	11%	53.0	245
Non-government	55%	38%	8%	32.1	185
Total	34%	57%	9%	43.7	430
Pearson Chi square= 62.097 P< 0.01					

Key: $P< 0.01$ ***, $P< 0.05$ **, $P< 0.1$ *

Appropriateness of Method Choice/Informed Consent: Assessment of Provider Actions

The items describing the process of consultation with clients by providers are indicated in Table 2. The results indicate a high score for most of the observed items; nevertheless, it is noteworthy to observe that 1 in 6 consultations were not conducted in an environment that assured both auditory and visual privacy. About 30 percent did not discuss concerns about the methods. Few providers (41%) orally assured the clients about confidentiality during consultation. The most notable finding is that only 15 percent of the providers used visual aids during the consultation.

Table 9 shows the distribution of the providers by performance category and background characteristics. Based on the items, few providers (12 percent) could be rated as having performed poorly during the consultations. The main differences occur by region and facility type. Despite few observations, providers in North Eastern province were more likely to be rated in the high category. The levels and differentials in performance as measured by the mean score indicate that providers in Western and Coast provinces performed better. Similarly, despite having low readiness scores, providers in clinics were more likely to perform better. The most important differences in provider performance stem from the contextual factors as measured by the region and facility characteristics and not individual or client characteristics.

Table 9. Percent distribution of providers by background characteristics and category of performance

Background characteristic	Percent In category			Mean score Range (0-7)	Number (N)
	Low	**Medium**	**High**		
Region***					
Nairobi	25%	47%	28%	4.9	57
Central	1%	30%	68%	4.9	79
Coast	21%	42%	37%	4.4	84
Eastern	4%	56%	40%	4.8	107
North Eastern	0%	17%	83%	6.0	6
Nyanza	5%	44%	51%	4.5	63
Rift Valley	18%	44%	38%	4.8	117
Western	10%	36%	54%	5.5	108
Pearson Chi square= 65.823 P< 0.01					
Facility type***					
Hospital	12%	39%	49%	5.1	413
Health center	11%	59%	30%	4.7	99
Clinic	4%	54%	43%	5.2	28
Dispensary	12%	50%	39%	4.9	52
Maternity	14%	28%	59%	5.0	29
Pearson Chi square=20.382 P< 0.01					
Managing authority					
Government-public	12%	42%	45%	4.7	471
Non-government	9%	45%	46%	5.2	147
Pearson Chi square= 1.468 P=0.48					
Sex of provider					
Male	10%	42%	48%	4.7	137
Female	12%	43%	45%	5.2	484
Pearson Chi square=.944 P= 0.62					
Education level of the client					
None	3%	50%	47%	4.9	30
Primary	12%	42%	46%	4.9	334
Secondary +	13%	43%	44%	4.7	242
Missing	0%	40%	60%	-	15
Pearson Chi square= 2.793 P= 0.59					
Age group of the client					
15-24	12%	42%	46%	5.4	231
25-34	13%	42%	45%	4.9	288
35-49	10%	46%	44%	4.7	88
Missing	0%	50%	50%	-	14
Pearson Chi square= .564 P=0.97					
Total	**12%**	**43%**	**46%**	**4.8**	**621**

Key: P< 0.01 ***, P< 0.05 **, P< 0.1 *

Client Perceptions: Assessment of Client Reactions to the Services Provided

Table 10 shows the distribution of the respondents by level of satisfaction. Client satisfaction was generally high and only 9 percent of the clients could be considered less than satisfied. There are no regional differences and the most important factors are the facility type and the managing authority. In general, client perceptions are notably high based on their responses to many of the quality of care items asked. Based on the individual items as described in Table 3, about 10 percent of the clients were not happy with issues on privacy, about 12 percent with explanations about method, and 25 percent with availability of medicines or methods. The waiting time to receive services at the facility was considered to be one of the worst aspects of service provision.

Table 10. Percent distribution of client by background characteristics and category of satisfaction rating

Background characteristic	Percent in category			Mean score	
	Low	Medium	High	Range (0-12)	Number (N)
Region					
Nairobi	9%	49%	42%	10.4	57
Central	14%	54%	32%	10.1	79
Coast	4%	62%	35%	10.8	84
Eastern	8%	54%	38%	10.6	107
North Eastern	0%	50%	50%	11.1	6
Nyanza	16%	51%	33%	9.4	63
Rift Valley	9%	47%	44%	10.4	117
Western	6%	57%	38%	10.5	108
Pearson Chi square= 16.635 P= 0.276					
Type of facility***					
Hospital	10%	54%	36%	10.2	413
Health centre	7%	61%	32%	10.2	99
Clinic	4%	54%	43%	10.8	28
Dispensary	8%	54%	39%	10.7	52
Maternity	3%	21%	76%	11.4	29
Pearson Chi square= 21.677 P< 0.01					

(Cont'd)

Table 10 – cont'd

Background characteristic	Percent in category			Mean score Range (0-12)	Number (N)
	Low	Medium	High		
Managing authority***					
Government-public	10%	58%	32%	10.1	474
Government-nonpublic	4%	38%	58%	11.3	147
Pearson Chi square= 32.889 P< 0.01					
Sex of the provider					
Male	9%	58%	34%	10.5	137
Female	9%	52%	39%	10.4	484
Pearson Chi square= 1.497 P=0.473					
Level of education of respondent					
None	3%	57%	40%	11.2	30
Primary	8%	52%	40%	10.6	334
Secondary +	5%	57%	37%	10.5	242
Missing	80%	7%	13%	-	15
Pearson Chi square= 2.966 P= 0.564					
Age of respondent					
15-24	6%	55%	39%	10.7	231
25-34	7%	56%	37%	10.7	288
35-49	9%	47%	44%	10.3	88
Missing	86%	14%	0%	-	14
Pearson Chi square= 3.202 P=0.525					
Waiting time***					
0-30 min	3%	44%	53%	10.9	319
31-60 min	6%	66%	28%	10.5	113
61 or more min	16%	68%	17%	10.1	164
Missing	48%	24%	28%	-	25
Pearson Chi square= 83.965 P< 0.01					
Provider talked about other methods					
No	11%	53%	36%		269
Yes	7%	54%	39%		352
Pearson Chi square= 3.154 P< 0.207					
Total	**9%**	**54%**	**38%**	**10.4**	**621**

Key: P< 0.01 ***, P< 0.05 **, P< 0.1 *

Multivariate Analysis

Tables 11-13 show the multivariate ordinal regression results for each of the independent variables. The estimates for both location and scale parameters are presented as cumulative odds ratios (Agresti, 2002). Ratios greater than one represent the relative likelihood of receiving a higher ranked score compared to the reference category. Where the model estimates include scale parameters for better fit, their estimates represent the extent to which the dispersion depends on the factor included in that part of the model. Values greater than one represent the extent to which the category tends to disperse compared to the reference category.

Facility Readiness

Only a limited number of factors were considered in the analysis of facility readiness. Once other factors are controlled for, facilities in North Eastern and Eastern provinces are less likely to be ready to provide quality of care compared to other regions. But the result for Eastern province is just marginally significant. Notably, health centres and dispensaries are less likely to provide adequate quality service compared to other facility types. In addition, much of the variation on the readiness index is caused by the health centre factor. The coefficient on the scale parameter indicates that variation is towards the lower tail, and therefore tends to lower readiness scores. One of the most significant differences is by type of managing authority. Government facilities were more ready to provide better family planning services once region and facility type were controlled for.

Table 11. Cumulative odds ratio estimates for ordinal regression on facility readiness

	Facility readiness		
	Odds ratio (exp B)	95% confidence interval	
Threshold (cut off)			
[Low]	0.37**	0.17	0.79
[Medium]	3.44**	1.58	7.53
[High](REF)			
Location parameters			
Region			
Nairobi	0.71	0.39	1.29
Central	1.05	0.60	1.82
Coast	1.10	0.63	1.93
Eastern	0.55*	0.30	1.01
North Eastern	0.26***	0.11	0.58
Nyanza	0.72	0.41	1.28
Rift Valley	0.64	0.36	1.12
Western(REF)			
Facility			
Hospital	0.72	0.39	1.36
Health centre	0.41**	0.19	0.86
Clinic	0.68	0.32	1.45
Dispensary	0.25***	0.10	0.59
Maternity(REF)			
Managing authority			
Government	4.64***	2.44	8.80
Non-Government (REF)	1.00		
Scale parameters			
Facility			
Hospital	0.74	0.50	1.12
Health centre	0.46***	0.28	0.76
Clinic	1.07	0.66	1.74
Dispensary	0.72	0.45	1.16
Maternity(REF)			
Number of Valid Responses (N)	405		
Pseudo R square	0.30		
Percent Predicted Correctly	64		

Key: P< 0.01 ***, P< 0.05 **, P< 0.1 *

Appropriateness of Method Choice/Informed Consent: Assessment of Provider Actions

For provider observation, there are no differences in the provider observation score by sex of the provider, age of the client, or educational attainment of the client. Similarly, the data show no variations by type of facility or the managing authority. The only differences appear to occur by the facility's regional location. Providers in Nairobi, Coast, and Rift Valley provinces were more likely to have poorer scores (Table 12).

Table 12. Cumulative odds ratio estimates for ordinal regression on assessment of provider actions

	Odds ratio	95% confidence interval	
Threshold (cut off) [High(REF)]			
[Low]	0.10***	0.03	0.39
[Medium]	0.68	0.27	1.71
Location parameters			
Region [Western(REF)]			
Nairobi	0.36***	0.17	0.77
Central	1.82	0.98	3.41
Coast	0.41***	0.21	0.80
Eastern	0.68	0.42	1.10
North Eastern	3.08	0.36	26.16
Nyanza	0.74	0.43	1.26
Rift Valley	0.46**	0.25	0.85
Facility[Maternity(REF)]			
Hospital	0.77	0.33	1.79
Health centre	0.59	0.25	1.36
Clinic	0.70	0.29	1.71
Dispensary	0.45	0.18	1.12
Managing authority [Non-government (REF)]			
Government	0.80	0.55	1.17
Sex of provider [Female(REF)]			
Male	1.29	0.91	1.84
Age of respondent [35-39(REF)]			
15-24	1.73	0.88	3.38
25-34	1.03	0.78	1.35
Education of respondent [Secondary+(REF)]			
None	1.46	0.92	2.30
Primary	1.29	0.85	1.96

(Cont'd)

Table 12 – cont'd

	Odds ratio	95% confidence interval	
Scale parameters			
Facility Maternity(REF)			
Hospital	0.93	0.52	1.66
Health centre	0.58	0.31	1.07
Clinic	0.55	0.26	1.18
Dispensary	0.73	0.37	1.42
Number of Valid Responses (N)	604		
Pseudo R square	0.14		
Percent Predicted Correctly	51		

Key: P< 0.01 ***, P< 0.05 **, P< 0.1 *

Client Satisfaction

Unlike previous regression results, the client satisfaction score does not depend on the client's region of residence (Table 13). However, there are clear facility differences once other factors are controlled for. Relative to the maternity, clients were less likely to have higher levels of satisfaction in all other facilities with clinics having much stronger effect. In addition, clients were more likely to be satisfied by services offered in non-government facilities. The waiting time to receive services is extremely important. Shorter duration means higher level of satisfaction. One surprising result is that clients are less likely to be satisfied when served by male providers. None of the individual characteristics (age and education) influence the clients' relative ranking of satisfaction of the services.

Table 13. Cumulative odds ratio estimates for ordinal regression client satisfaction

|	Odds ratio	95% confidence interval	
Threshold (cut off) [High](REF)			
[Low]	0.01***	0.00	0.05
[Medium]	0.49	0.13	1.86
Location parameters			
Region [Western(REF)]			
Nairobi	0.76	0.36	1.61
Central	0.57	0.29	1.12
Coast	0.72	0.38	1.35
Eastern	1.31	0.72	2.36
North Eastern	1.42	0.26	7.89
Nyanza	0.46**	0.23	0.92
Rift Valley	0.91	0.52	1.61
Facility[Maternity(REF)]			
Hospital	0.31**	0.10	0.92
Health centre	0.23**	0.08	0.72
Clinic	0.14**	0.04	0.50
Dispensary	0.31	0.09	1.04
Managing authority [Non-Government (REF)]			
Government	0.39***	0.24	0.63
Sex of provider [Female(REF)]			
Male	0.58**	0.38	0.88
Age of respondent [35-39(REF)]			
15-24	0.98	0.56	1.72
25-34	0.73	0.42	1.26
Education of respondent[Secondary+(REF)]			
None	1.08	0.46	2.52
Primary	1.27	0.88	1.83
Waiting time to service [61 or more minutes (REF)]			
30 min or less	5.86***	3.71	9.26
31-60 min	2.29***	1.35	3.88
Provider talk about other methods [Yes(REF)]			
No	0.73*	0.50	1.05
Number of Valid Responses (N)	591		
Pseudo R square	0.25		
Percent predicted correctly	63		

Key: P< 0.01 ***, P< 0.05 **, P< 0.1 *

Facility Readiness, Provider Service Provision, and Client Satisfaction Simulated Results

The results can be viewed much more clearly when predicted probabilities are utilized. Figures 2-4 represent the predicted proportions (they have been multiplied by 100 for clarity) of high client satisfaction, high provider performance score, and lower facility readiness by region, facility type, and managing authority. Interesting results come from Nyanza, North Eastern, Coast, and Nairobi provinces. Nyanza has fewer clients (10%) reporting higher satisfaction levels, but has high-performing providers when all other factors are controlled for (Figure 2). North Eastern province, despite having less-ready facilities (67% in lower rank), does have both high-performing providers and a higher proportion of more satisfied clients. The Coast province, despite having few facilities with low scores in readiness, still has fewer satisfied clients in addition to rather poorly performing providers.

The most consistent facilities are the maternity homes, which are more ready (none fell in low readiness category) and have better performing providers and more satisfied clients. Hospitals, with better facilities and better performing providers, still have a lower proportion of satisfied clients. Clinics, health centers, and dispensaries show contrast with less highly satisfied clients, relatively low performing providers, and less readiness to provide the required services.
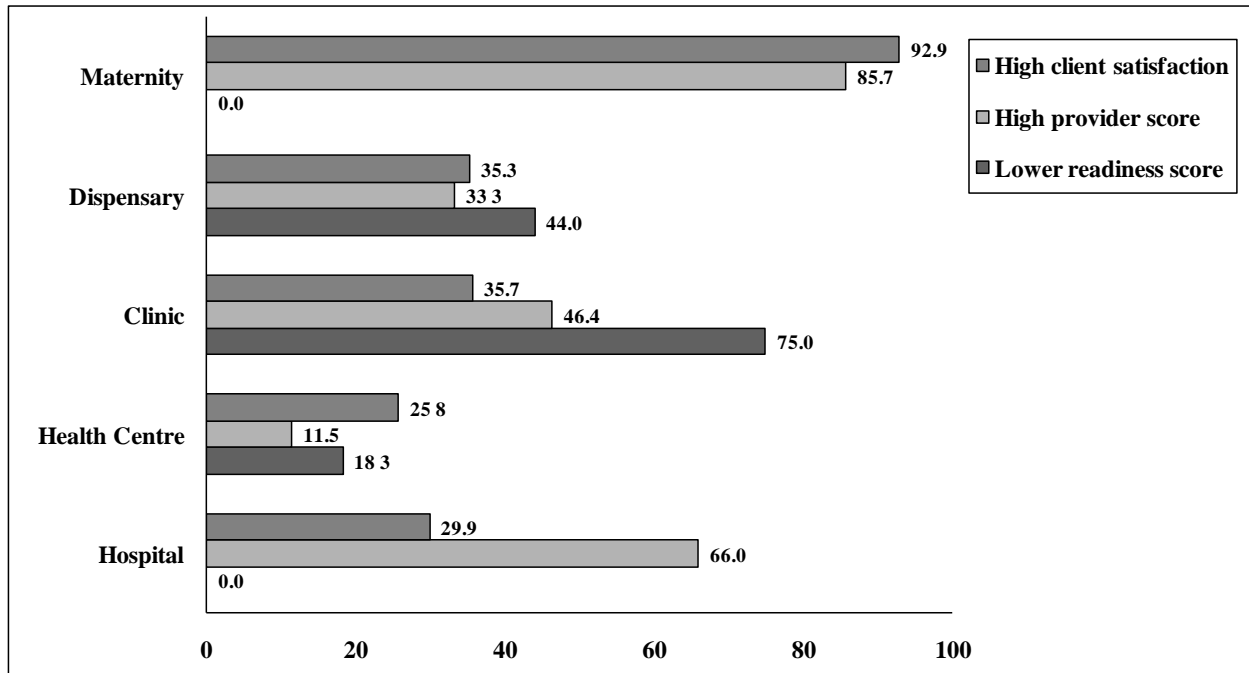
Figure 2. Predicted probabilities of having high client satisfaction score, high provider performance score, and low facility readiness score by region
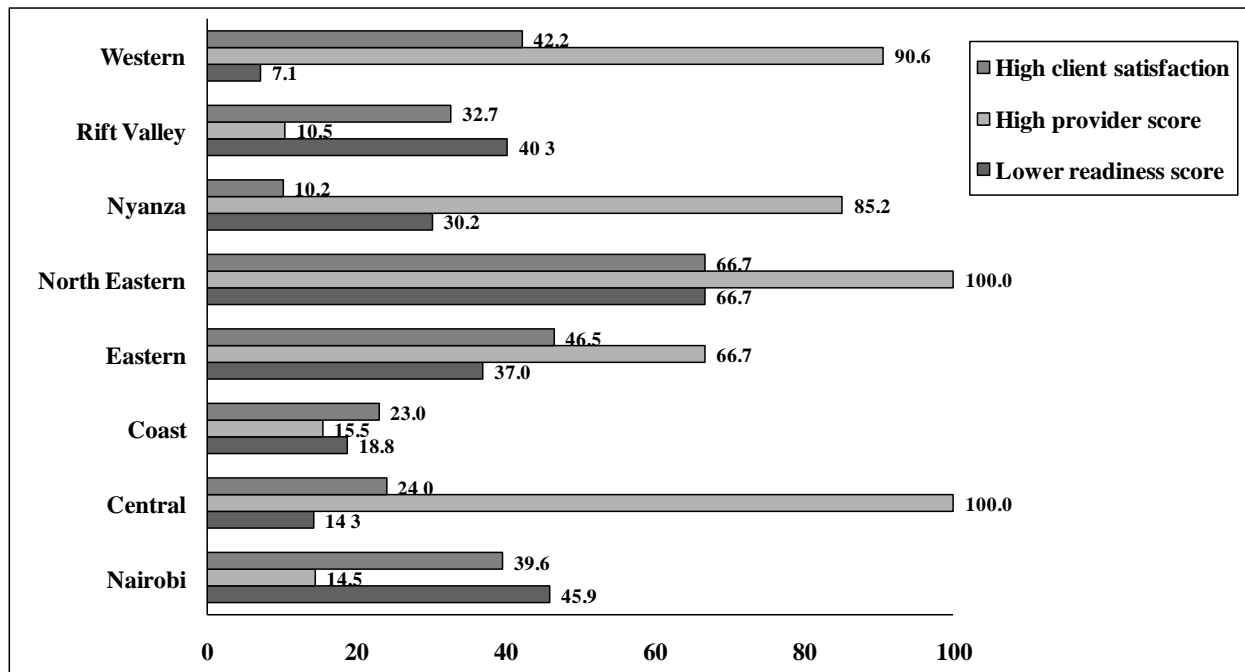
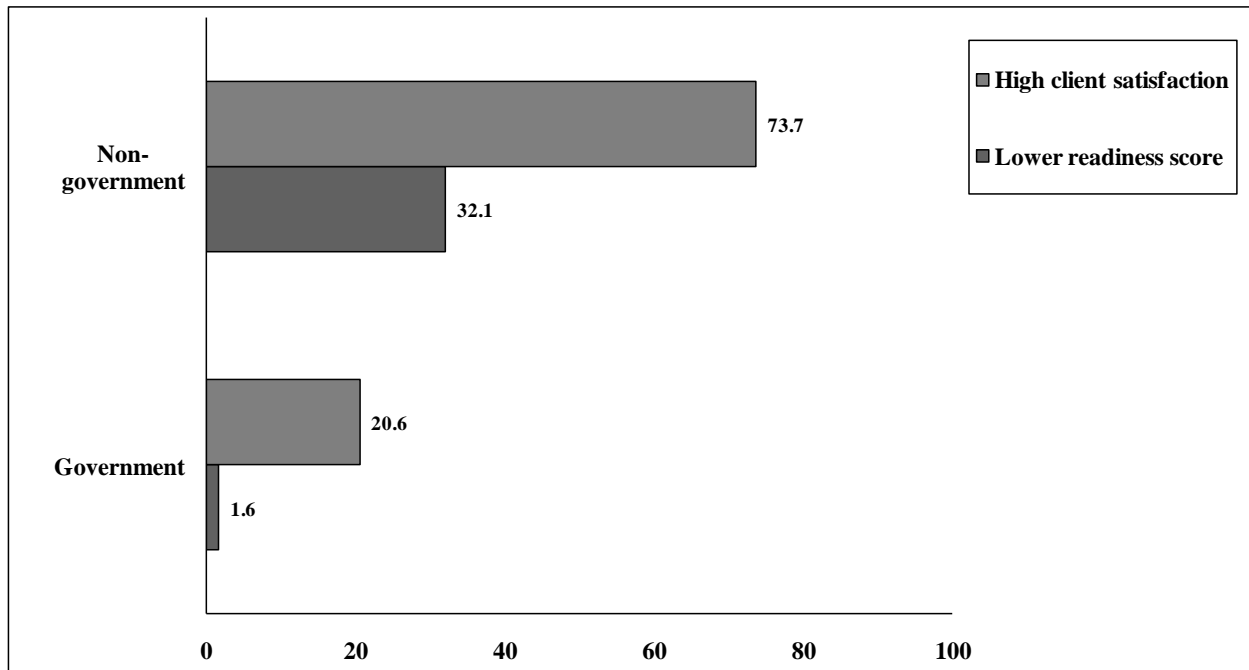Note: The values have been multiplied by 100.

Figure 3. Predicted probabilities of having high client satisfaction score, high provider performance score and low facility readiness score by type of facility

Note: The values have been multiplied by 100.

Figure 4. Predicted probabilities of having high client satisfaction score and low facility readiness score by managing authority

Note: The values have been multiplied by 100.

DISCUSSION AND CONCLUSIONS

In this study, we examined factors associated with each of three elements of quality family planning service provision. Since there are several dimensions to the measurement of quality of care depending on the availability of data, we looked at the factors associated with good performance in facility readiness, provider behaviour during the course of service provision, and the extent of client satisfaction. However, one limitation of the study is the inability to determine the relative effect of these factors on client contraceptive use or intentions.

Descriptive data indicates that facilities' readiness to provide quality of care is not yet satisfactory. Many facilities lacked essential but simple care instruments and guidelines for performance. Nearly all facilities have oral contraceptives, injectables, and condoms, but implants and IUDs are readily available in only hospitals and a few maternity homes. Although results are not shown, it was also evident that a substantial proportion of providers did not inform clients about other methods. The indication here is that the majority of facilities still lack a variety of methods. In order to provide complete services, clinics, health centres, and dispensaries need to be upgraded to provide a variety of methods. The other intriguing fact is the lack of training of providers in several facilities. In addition, few facilities evidenced regular staff supervision. Lack of staff supervision and training is, however, more predominant in Nairobi, the capital city, which may imply some structural management issues.

The multivariate results confirm regional and facility differences in the relative readiness to provide quality services. North Eastern Province, which is fairly remote compared to other provinces in Kenya, appears to be considerably disadvantaged. The disadvantages may be due to other factors such as lack of supportive infrastructure to the health care system including the ability to recruit and retain qualified staff.

In general, health centres are also not adequately prepared to provide quality family planning services. The low mean scores of the readiness index are partly due to the low scores from health centres. On the other hand the government-supported facilities are more likely to have appropriate service provision s compared to the non-government facilities.

 The descriptive data indicate that providers were unlikely to use visual aids during consultation. While visual aids (including manuals, posters, flipcharts, and flowcharts) can be valuable and inexpensive tools (Knebel et al., 2000), their use during consultation may be controversial, as some providers feel that using visual aids decreases their credibility with clients while others may be inadequately trained and supervised in using visual aids (RamaRao and Mohanam, 2003). Nevertheless, studies have indicated that visual aids help clients choose the method that matches their reproductive goals and also enhances better quality of care expectations (León, 2001). An earlier situation analysis in Kenya found that providers who used contraceptive samples and anatomical models during counselling sessions gave clients more information about their chosen contraceptive method (Ndhlovu, 1998).

We examined whether provider behaviour differed by age of the client or educational characteristics. Our results confirm a lack of provider bias due to either age or education of the client. Despite the fact that facilities differ in their readiness to provide appropriate services, there were no differences in provider behaviour by either facility type or managing authority. The observed regional differences in provider behaviour may be due to other factors that may not have been accounted for here. Providers living in difficult areas may be less motivated to provide services due to the living conditions, especially when they are not the indigenous people. Rift Valley and Coast provinces do have facilities that are located in relatively difficult areas to live in, but this may not be true for Nairobi. One may argue that the high cost of living in Nairobi

results in   providers focusing their attention more in the private clinics to supplement their income, hence paying less attention to the regular duties in their facilities. Nevertheless, this may only be true for providers in the public sector rather than the private sector. However, it was also noted from initial bivariate analysis that Nairobi providers were less likely to be supervised and provided with on the job retraining (data not shown). For more information on provider behaviour, additional elements may be necessary to reliably measure the extent of provider behaviour. Nevertheless, the scores obtained from our measure indicate high performance.

Client perceptions are shaped by cultural values, previous experiences, perceptions of the role of the health system, and interactions with providers (Lantis et al., 2002; Miller, 1998) but results obtained here indicate lack of regional differences. The most important factor related to client perceptions is the waiting time for services. This could explain the observed differences in client satisfaction by facility types. Most of the maternity facilities are managed by non-government organisations, are fee–based, and are less likely to be crowded. Therefore, they have a shorter waiting time to receive services. On the other hand, the government-managed facilities are more likely to have many customers and constant staff shortages, resulting in a longer waiting time to receive services and leading to decreased client satisfaction. This is more predominant in health centres and dispensaries. Client satisfaction is also likely to be influenced by the facility's readiness; therefore, clients are also likely to rate government facilities lower compared to other facilities.

We find that clients were less satisfied in Nyanza province, despite the fact that Nyanza had more-ready facilities and high-performing providers. In contrast, North Eastern province had less-ready facilities, but registered high client satisfaction and high provider performance. These

results require further investigation. Similarly, despite government facilities being more ready, clients were still more likely to be less satisfied with their services.

Other than waiting time to receive services, client perception may also be influenced by provider behaviour. It is intriguing that clients were more likely to be satisfied with female rather than male providers. This corroborates an earlier study by UNFPA (1994) on eight developing countries which concluded that clients were more satisfied when they were examined by female rather than male providers.

The draft policy on reproductive health states that policy interventions to reduce unmet need for family planning, unplanned births, and regional and socio-economic disparities in contraceptive prevalence rates include: creation of sustained demand for family planning; guaranteed contraceptives commodities security; involvement of males in family planning programmes; promotion of communities and private sector participation in provision and financing of services, and a strengthened reproductive health service delivery system at all levels. Our results indicate that clients are more satisfied with non-government service outlets, yet government facilities are more ready to provide quality services. Hence the need to convince the clientele on the availability of appropriate services within the government facilities. Health centres and clinics perform relatively poorly in terms of being ready to provide services. Clients also rate health centres and clinics low; these facilities need to be revamped to appropriate standards so as to include all basic elements of family planning service provision. This is indeed the core output stated in the national health sector strategic plan II 2005-2010 that strives towards service quality and responsiveness. Waiting time to receive services is an important component in providing services, but this may be in contrast to the issue of consultation time

with providers. Nevertheless, the efficacy of the services will depend heavily on customer perception.

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