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Provider and Health Facility Influences on Contraceptive Adoption in Urban Pakistan

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Abstract

This paper examines individual, provider and health establishment characteristics associated with the receiving of a contraceptive method among women attending health establishments in Pakistan, using data from a survey of health facilities, their staff, and clients in urban Pakistan. The results highlight that the receiving of a contraceptive method on attendance at a health establishment is the product of characteristics of the client, the provider and the health establishment. At the client level there exist significant educational differentials in the receiving of a method of contraception. At the health establishment level, indicators of capacity and preparedness had a significant influence on the receiving of contraceptive methods. The results point to several areas of potential intervention at both the client and health establishment level to improve contraceptive uptake. Providers need to be sensitized to the differing needs of clients with varying levels of education and of differing parities. Additionally, gains in service quality can be achieved through efforts to provide diversity in method choice and staff presence, and by improving institutional capacity for service provision.

Introduction

Pakistan currently has the highest total fertility rate in South Asia (TFR 4.8) and consequently continues to experience rapid population growth (UNFPA 2003). At the time of the 1951 census, Pakistan's population was 33.8 million, which had increased to 167 million by 2004, an increase of 113.46 million in approximately two generations (Ministry of Finance, Pakistan 2005: UNFPA 2004). The problem of rapid population growth was first recognized by the Government in its second five year plan (1960-65), which focused on restraining population growth, but failed to set specific goals. Since then the most striking development in over 40 years of population policy and program efforts has been the impact of initiatives undertaken in the 8th five year plan (1993-98), which aimed to increase contraceptive prevalence and reduce fertility. The resultant rise in the Contraceptive Prevalence Rate (CPR) from 12% in 1991 to 28% in 2000 cannot be attributed to achievements made by any one sector, and has involved significant contributions from both the public and private health sectors (Pakistan Reproductive Health and Family Planning Survey (PRHFPS) 2001).

In recent years, there has been a substantial rise in knowledge of family planning in Pakistan. It is estimated that 96% of currently married women are aware of at least one contraceptive method (PRHFPS 2001). Knowledge of how to obtain contraceptive methods is also high; for example 76% of married women report knowledge of a place to obtain female sterilization, an increase from 37% in 1991 (PRHFPS 2001). Despite this high knowledge of family planning, the CPR remains low and fertility remains high; this situation is in stark contrast to the programmatic successes achieved in other South Asian

countries. Pakistan's fertility rate is estimated to exceed the ideal number of children by more than one child, indicating a large unmet need for family planning services (Mahmood and Ringheim 1997), the product of both a lack of adequate services and a social milieu that is unfavorable to the adoption of contraception (Shelton *et al* 1999; Mahmood and Ringheim 1997; Razzaque Rukanuddin and Hardee-Cleaveland 1992). Additionally, the coverage and quality of family planning services is poor, with only 10% of the population living within easy walking distance of government operated family planning services (Rosen and Conly 1996). Given the paradox of high levels of knowledge of family planning and low levels of family planning adoption it is necessary to understand the factors that have prevented knowledge transferring into use. This paper focuses on health service characteristics that influence the adoption of family planning, using a sample of women of reproductive age (15-45) attending health services in urban Pakistan. A greater understanding of the health service related factors that influence family planning adoption has the potential to improve the provision of quality family planning services.

Family Planning Service Provision

Decreasing population growth has become a permanent feature of Government of Pakistan's 5 year plans, which were initiated in 1955. The 5 year plans continue to highlight the consequences of rapid population growth on social and economic development, and the Government's resolve to support the population program (Government of Pakistan Planning Commission 1994.) During the eighth plan period (1993-98), the Population Welfare Program, the main program under which the

Government delivered family planning services, received significant political and administrative support. Coverage of rural areas was increased by extending the scheme of Village Based Family Planning Workers (VBFPW) to all districts of Pakistan. Simultaneously, the Ministry of Health also launched the Lady Health Workers (LHW) program of Primary Health Care and Family Planning, again increasing the coverage of family planning services in rural areas (UNFPA 2003). In 2000, under the directive of the Chief Executive of Pakistan, an assessment of the Population Welfare Program was undertaken, and it was recommended that all health outlets should provide the full range of family planning methods and services, a recommendation that was approved in 2001 (UNFPA 2003). The results of the assessment also led to the merger of the VBFPW and LHW programs, and were placed under the Ministry of Health in 2002.

All responsibilities for the provision of family planning services in rural communities now rest with the Ministry of Health. Community workers in rural areas provide oral pills and condoms to their clients while other family planning methods are available through the Basic Health Centre and Rural Health Centre networks. In urban areas all modern family planning methods are available through the public sector. In rural areas sterilization and IUD services are available only in rural health centers. However, the integration of family planning services within basic and essential health services in the public sector is far from complete (UNFPA 2003). Furthermore, maintaining a consistent supply of contraceptive commodities is a recurrent problem area for the public sector in Pakistan. The current public sector initiative for expanding community based distribution implies the use of a large number of providers. Such an approach, involving thousands of

staff, has serious implications for ongoing recurrent costs and maintaining standards of quality of care, which are difficult to sustain without coordinating with the private sector and NGOs, a coordination which is not currently underway (UNFPA 2003). Achieving a standard level of performance from health care providers is a goal that has not yet been achieved, and requires increases in the number of female health care providers, greater provision of training, a consistent provision of commodities, friendlier service environments, and extensive supervision, none of which can be presently provided by the public sector (Karim 2004).

Although a large number of NGOs are involved in the provision of family planning services in Pakistan, they remain largely dependent on support from the government, or local and international donors. Some well established NGOs, such as the Family Planning Association of Pakistan and Pakistan Voluntary Health and Nutrition Association (PAVHNA), have played a vital role in improving family planning service access among marginalized groups, currently providing reproductive health services to a population over 2 million (PAVHNA 2005). Similarly Marie Stopes Society provides quality reproductive health services through its twenty one urban-based clinics in all four of the provinces of Pakistan (Marie Stopes International 2005). The Family Planning Association of Pakistan, has 160 work units, with over 540 service outlets in all provinces of the country, contributing 10-12% of the family planning national service delivery. The Family Planning Association of Pakistan has played a leading role in adopting the paradigm shift towards holistic development and is providing women, men and adolescents with reproductive and sexual health services (International Planned

Parenthood Federation 2005). NGOs in Pakistan also provide a range of services such as advocacy for women's rights, community mobilization, human resource development, health education and communication in addition to curative and preventive reproductive health services. However, there has been little formal assessment of the impact of these NGOs on increasing family planning and reproductive health indicators in the population (Karim 2004).

The Ministry of Population Welfare (MoPW) has attempted to address the challenge of meeting family planning needs by encouraging the involvement of the private sector in family planning service delivery. The private sector in Pakistan provides over 70% of all health care, but has limited involvement in family planning provision (Karim 2004). The public sector currently provides approximately 54% of contraceptive coverage compared to 20% by the private sector (Karim 2004). The main success achieved by the private sector has been the adoption of a social marketing approach, in which commercial marketing techniques are adapted to the provision of family planning services, in an attempt to make products and services available and affordable to low income groups (UNFPA 2003; Stephenson *et al* 2004). Two social marketing programs are currently in operation: Green Key and Green Star. Green Star was launched in 1997 under Social Marketing Pakistan (SMP) and is focused on urban areas. The Green Star network currently includes 11,000 health care providers, with an estimated 20% coverage of total couple years of protection (Green Star 2005). The Green Key network is implemented by The Futures Group and was launched after Green Star. Green Key offers training in birth spacing counseling and access to hormonal contraceptive products (Familia-28 and

Nordette-28 oral contraceptives and Depo-Provera injectables) to physicians, paramedics and pharmacists interested in expanding their family planning services (Green Key 2005). Health care providers can participate in both Green Star and Key networks if motivated to expand the number of contraceptive methods and brands offered. Social Marketing Programs now provide almost one quarter of modern contraceptive coverage in Pakistan (60% of all condom use, 45% of all pill use, approximately 6% of injection use and 7.5% of all IUCD) (Karim 2004). Despite the range of health care providers currently offering family planning services in Pakistan, little is known of the health care characteristics that are associated with the adoption of contraception.

Barriers to family planning service use

The influence of physical access on the utilization of family planning services is well-founded (Tsui and Ochoa 1992), although research now recognizes that problems of access extend beyond physical access to services, and include issues of economic, administrative, cognitive and psychosocial access (Stephenson and Hennink 2004; Bertrand *et al* 1995; Foreit *et al* 1978). Furthermore, the barriers to family planning service use are seen as extending beyond factors operating at the individual and household levels, to include characteristics of the social and cultural environment and the health service infrastructure. This view of access recognizes the importance of attributes of the health system in shaping an individual's ability to seek health care, highlighting the importance of the supply environment on health care utilization.

Previous studies of the use of reproductive health services have largely focused on factors operating at the individual and household levels, broadly categorized as demographic, socioeconomic, cultural and health experience factors. Demographic factors that have been shown to increase the likelihood of using reproductive health services are; low parity (Magadi *et al* 2000; Kavitha and Audinarayana 1997) and younger maternal age (Bhatia and Cleland 1995). Socioeconomic factors, however, have been shown to be of greater importance in determining health service utilization than demographic factors (Obermeyer and Potter 1991). Whilst demographic factors may shape the desire to use services (e.g. younger women may have more modern attitudes towards health care use) the socioeconomic status of an individual and the household in which they live determines the economic ability to utilize health services. In terms of socioeconomic factors, the most consistently found determinant of reproductive health service utilization is a woman's level of educational attainment (Addai 1998; Bhatia and Cleland 1995; Magadi *et al* 2000; Nuwaha and Amooti-kaguna 1999; Obermeyer 1993). It is thought that increased educational attainment increases service use by increasing female decision-making power, increasing awareness of health services, changing marriage patterns and creating shifts in household dynamics (Obermeyer 1993). Cost has often been shown to be a barrier to service utilization (Griffiths and Stephenson 2001; Bloom *et al* 1999) and also influences the choice of service provider. Socioeconomic indicators such as urban residence (Addai 1998), household living conditions (Magadi *et al* 2000; Bloom *et al* 1999), household income (Kavitha and Audinarayana 1997) women's employment in skilled work outside the home (Addai 1998), high levels of husband's education (Nuwaha and Amooti-kaguna 1999) and occupational status (Nuwaha and Amooti-kaguna 1999)

have also proven to be strong predictors of a woman's likelihood of utilizing reproductive health services.

Both demographic and socioeconomic determinants of reproductive health service utilization are mediated by cultural influences on health service behavior (Basu 1990; Goodburn *et al* 1995). The most evident psychosocial influences on family planning service use amongst women in Pakistan are the behavioral norms that relate to residence in an Islamic society. The prevailing value systems of *purdah* and *izzat* encourage the segregation of the sexes and the confinement of women to the family home, reducing women's mobility and access to services. Family planning services with male practitioners, or those located in areas where there may be males present a barrier to use for women who are observing *purdah*. Women may need permission from their husband or household elders to seek health care. Additionally, the doctrine of Islam has often been interpreted to forbid the use of family planning methods (Obermeyer 1994; Underwood 2000). The ambiguity of the interpretation of the Holy *Koran* towards family planning means that attitudes towards family planning in Muslim communities are often shaped by local consensus of opinion (Amin *et al* 1997). Hence women's use of family planning services is often shaped by the prevailing religious attitudes of those in their community.

In addition to individual, household and community barriers to family planning service use, previous studies have highlighted the influence of the supply environment on an individual's ability to utilize services. Numerous studies have demonstrated an association between service quality (or perceived quality) and an increased use of family

planning services (Koenig *et al* 1997; Magnani *et al* 1999; Mensch *et al* 1996). In a study of family planning service provision in Tanzania Speizer *et al* (2000) found that provider bias in method promotion and age restrictions to the use of some contraceptive methods lead to the creation of restrictive barriers to contraceptive adoption. Similarly, Williams *et al* (2000) demonstrate high levels of dissatisfaction with family planning services in their analysis of exit interview data from eight Latin America countries, with long waiting times and cost of services highlighted as the main areas of dissatisfaction. Thus, the characteristics of family planning services themselves may act as a barrier to service use. The influence of service characteristics on service use may also be influenced by a woman's previous experience of health services. Previous contact with health professionals creates both confidence and familiarity in using health services, making a woman more likely to use other reproductive health services. A woman's previous exposure to health services has been shown to be a strong predictor of her propensity to utilize reproductive health services (Basu 1990; Bloom *et al* 1999).

In the 1990s there was an increased focus on quality of care in family planning services, with the implicit assumption that improved quality of care would result in efficient services and increased service uptake. Quality of care lays the foundation for long term contraceptive use and greater client satisfaction (Jain 1989). In a cross country comparison of 15 countries Blanc *et al* (2002) has shown that within a year of starting use of a method, between 7% and 27% of women cease to practice contraception for reasons related to the quality of the service environment. Similarly, in Peru contraceptive prevalence would be 16-23% greater if all women lived in areas with reproductive health

services providing highest quality of care (Mensch *et al* 1996). In Bangladesh clients who received what they perceived as high standards of care from field workers were significantly more likely to continue contraceptive use compared with those who felt that they received poor care, although the effects of quality of care provided by field workers upon contraceptive acceptance were less pronounced than those upon contraceptive continuation (Koenig *et al* 1997). Thus what may be most critical is not the absolute number of methods offered to the client but the degree of trust, rapport and confidence established between the field worker and the client. Switching between contraceptive methods also increases as the quality of services offered increases with good counseling encouraging clients to present earlier and leading to more informed method choice and the switching between methods as reproductive intentions change (Bongaarts and Bruce 1995).

Using data from the Pakistan Demographic and Health Survey (1990-91), Mahmood and Ringheim (1996) examined the effect of socio-cultural and supply factors on contraceptive use among married women of reproductive age. In addition to the expected positive influence of women's age, number of living children, education and place of residence on contraceptive, other factors specific to the Pakistani context were found to influence contraceptive use. These included the extent of spousal communication, religious beliefs, female autonomy, son preference and characteristics of family planning services. Additionally, Miller *et al* (1999) showed that despite the "courtesy bias," (the tendency for clients to report satisfaction with services) a substantial proportion of users

in Pakistan are not satisfied with female modern contraceptive methods, with 59-67 % of women reporting negative effects on sexual relations.

Given the demonstrated unmet need for family planning and the high levels of knowledge of family planning in Pakistan, there clearly exist barriers to family planning uptake. Stephenson and Hennink (2004) demonstrated that economic, cultural, cognitive and administrative barriers to family planning service use all exist among the urban poor, highlighting the range of barriers that may exist to service use within one environment. This paper extends upon previous research through an examination of the health service factors that influence contraceptive uptake among women attending health facilities in urban Pakistan. The analysis examines the influence that characteristics of the service provider and the health establishment have upon the ability of the client to adopt a method of family planning when she attends a health facility. A greater understanding of the influence of the provider and the health facility on family planning adoption has the potential to inform the provision of quality family planning services through the identification of characteristics of the health service environment that can be harnessed or changed to improve service delivery.

Data

The data for this analysis comes from a multi-stage cluster sample of health facilities, their health staff, and clients conducted in urban Pakistan, under the Alternative Business Models (ABM) project at the University of North Carolina- Chapel Hill (Carolina Population Center 2005). Health facilities were sampled first, and then staff and clients

were sampled within health facilities. The sample of health establishments was drawn for the urban areas only as the ABM project was originally concerned with franchised health services which are located only in urban areas. Cities were stratified into three population size groups and a total of eleven cities were selected with probability proportional to size (PPS). Within cities wards in the low to middle income areas were sampled using PPS and all health facilities within these wards mapped and listed. A systematic sample of facilities was then selected with a target size of 1000 and actual sample of 993 health facilities from the governmental, non-governmental non-profit, pharmacy / other, and private sectors. The private health facilities were then divided into franchised and non-franchised health facilities. Within each selected ward all franchised health facilities were sampled. Across all types of health facility, all health staff in the facility were enumerated and all authorized to provide family planning services were interviewed if present; the achieved sample size was 1,113 staff. Clients presenting at the sampled health facilities on the day of the facility survey were listed; and with the estimated daily volume and after a random start, eight clients (male or female) were selected systematically for exit interviews at each site. The total client sample size was 7,431 in 993 health establishments.

The client questionnaire collected data on purpose for visit to the health facility, service preferences, satisfaction with services, background demographic and socioeconomic characteristics, and history of family planning use. The provider questionnaire collected data on provider training experience, training quality, and client loads. The health facility questionnaire collected data on service activity and features, commodity availability, and

physical characteristics of the health facility. The data for providers and clients can be linked to the health facility at which they work / attend for service.

The present analysis examines the determinants contraceptive adoption among women attending family planning clinics. The analysis is restricted to women with at least one child who are attending a family planning clinic. Men are not considered in the analysis due to potential differences in the covariates influencing contraceptive adoption between men and women: 3239 men are removed from the sample. Nulliparous women are not considered in the analysis due to the very low chances of such women choosing to adopt contraception: 514 nulliparous women are removed from the sample. Only health facilities that offer family planning services are considered in the analysis, resulting in the removal of 2685 women from the sample. The result is a sample of 993 women of reproductive age (15-45).

Methods

The analysis considers a three stage process in operation at the health facility; first the client is motivated to adopt family planning, second the provider asks the client about her fertility intentions, and third the client receives a method of family planning. The analysis fits a logistic model to a binary variable coded one if the woman meets all three stages of this process; she expressed a desire to cease or space childbearing, and the provider asked her about her fertility intentions, and the client then received a method of family planning.

Figure One illustrates the conceptual framework used to inform the selection of covariates for the model. Stage one, the woman's desire to cease or space childbearing, is influenced mainly through individual and household level factors. The decision of a woman to control her fertility is assumed to be the product of the socioeconomic and demographic characteristics of herself and others in her household. There is an argument for the inclusion of community level influences at this stage, to reflect societal influences on fertility, but the ABM data does not collect community level data. Stage two, in which the provider asks the client about her fertility preferences is presumed to be influenced by provider characteristics, with the assumption that a provider's knowledge to ask a client about fertility preferences is a product of their training, working activities and background characteristics. Stage three, in which the provider receives a method of family planning, is assumed to be influenced by health facility characteristics, for example the current range and availability of methods, client volumes and staffing levels.

The independent variables in the model are grouped according to the stages of the conceptual framework. For stage one, only the client's parity and level educational attainment are included. The analysis sample is a highly selective clinic-based population with an expressed desire to cease or limit childbearing, and thus is already selected on many of the socioeconomic and demographic characteristics that influence service use or the decision to adopt family planning. For stage two, the provider, the model considers the mean number of years of family planning experience of the provider, the proportion of providers who have received in-service training in family planning, and the proportion of female family planning providers. For stage three, the health facility, the model

considers the mean number of family planning methods offered by the service, the mean number of staff offering family planning services, the number of doctors and the number of Lady Health Workers (LHW) present at the health facility, the proportion of the medical staff that are doctors, and the proportion of methods offered that are available at the time of the survey. The model also considers the type of health facility (public, private, NGO), whether the health facility has a separate area for family planning service provision, and whether the health facility displays family planning IEC materials. Distributions of the independent variables are given in Table One.

Results

Of the analysis sample, 23% (228 women) reported that they had a desire to cease or limit childbearing, had been asked by the provider of their fertility intentions, and had received a method of contraception. Table Two shows the model results. In terms of client level factors, both parity and educational attainment were significantly related to the receiving of a family planning method. Relative to women with no education, women with secondary or higher education have significantly higher odds of receiving a method of family planning (Odds Ratio (OR) 1.77). Women at parity 2-4 (OR 4.98) and 5+ (OR 9.34) have significantly greater odds of receiving a family planning method than women at parity 1-2. In terms of provider characteristics, there was a significant negative effect of the number of years of experience of family planning held by the provider (OR 0.96) on the client's odds of receiving a family planning method. At the health establishment level, there was no significant influence of the type of health facility a client was attending or the health establishment's membership in a franchise network on her odds of

receiving a method of family planning. Women attending health facilities that displayed family planning IEC materials (OR 1.78) were significantly more likely to receive a method of family planning. The number of family planning methods offered by the health facility was not significantly related to the outcome, but the proportion of methods usually offered that were available at the time of survey had a significant positive influence (OR 2.38) on a woman's odds of receiving a method of family planning.

Three measures of staffing levels were significantly related to a woman's odds of receiving a family planning method. The percentage of the health facility staff who offered family planning services (OR 1.26), and the number of doctors of the health facility (OR 1.21) were both positively associative with a woman's odds of receiving a method of family planning. However, the number of Lady Health Workers (LHWs) at the health facility has a significant negative association (OR 0.77) with a woman's odds of receiving a method of family planning. The number of family planning clients who attended the clinic in the month prior to the survey (OR 1.02) was significantly positively associated with a woman's odds of receiving a family planning method

Discussion

This analysis examined the individual, provider and health establishment characteristics associated with the receiving of a contraceptive method among women attending health establishments in urban Pakistan. Previous studies of the factors associated with contraceptive adoption have concentrated on individual and household factors present in the general population that inhibit or facilitate adoption. For example, Stephenson and

Hennink (2004) examined the barriers to the uptake of family planning services among the urban poor in Pakistan, concluding that women faced significant economic, social and administrative barriers which prevented them from accessing family planning services. The analysis sample, however, represents a very select group of women: those who have surmounted these significant social and economic barriers to access health services, and women who have a desire to limit or cease childbearing. Previous studies have also shown that access to reproductive health services is significantly related to educational attainment (Addai 1998: Nuwaha and Amooti-kaguna 1999), economic status (Kavitha and Audinarayana 1997) and indicators of female autonomy (Obermeyer 1993). The women in this sample are thus likely to be wealthier, of higher education, and have more autonomy than women in the general population. The results of this analysis are thus not representative of the general population of women of reproductive age, and the interpretation of the results should reflect the selectivity of the sample.

Few individual level variables proved to be significantly related to the outcome, the product of the highly selective nature of the analysis sample. However, even after such selectivity, both the respondent's level of educational attainment and her parity were significantly associated with the receiving of contraception. Women with educational attainment of secondary level or higher, and women at parity 3 or higher had significantly higher odds of having a desire to use a method of contraception, of being asked by the provider if they wanted to cease or limit childbearing, and of then receiving a method of contraception. The significant association between parity and the outcome likely reflects the combination of two processes: women of higher parity are more likely to want to

adopt contraception (the first stage of the process modeled), and women of higher parities are also more likely to be asked by providers if they wish to use contraception (the second stage of the process modeled). The effect of education suggests that even after surmounting the barriers faced in accessing services, women with higher levels of education have a significant advantage in terms of their likelihood of receiving a method of contraception. This may reflect an association between educational attainment and wealth; women with higher levels of education may be more likely to be able to afford contraceptive methods. Alternatively, women of higher education may be more able to articulate their fertility desires, or may receive more favorable attention from providers. Previous studies of quality of care in family planning services have identified a provider bias towards more educated clients (Schuler and Hossain 1998) with the poor and uneducated often feeling they lack power in interactions with service providers.

At the provider level only the mean number of years of experience in family planning provision was significantly associated with the outcome. The relationship was negative, suggesting that greater mean number of years of experience of the providers at the health establishment is associated with a decreased likelihood that women attending the clinic will be asked their fertility desires and will receive a method of contraception. The model also controlled for the receiving of in-service training, so it is unlikely that this negative relationship reflects a lack of training among more experienced providers. The negative association between the mean number of years of family planning service experience and the outcome may reflect an underlying association between the age of the provider and the likelihood of the client receiving a method of contraception. Providers with more

years of experience are likely to be older, and previous research has suggested that client-provider interactions are more likely to be client-centered (and thus more effective) when the provider is aged under 30 (Abdel-Tawab and Rotter 2002). Young providers are not only more likely to be closer in age to the client, but may also have less traditional views surrounding fertility and contraception. In Pakistani society particular importance is placed on the respect of elders, and thus a younger client may feel intimidated by or unable to communicate freely with an older provider, decreasing the likelihood that the client will receive the service they desire. The analysis also explored the influence of the gender composition of the providers on the outcome, yet the proportion of providers at the health establishment who were female was not significantly related to a woman's likelihood of receiving a method of contraception. This is a surprising result in the context of Pakistan, where the prevailing *purdah* system encourages the segregation of the sexes and limits women's access to health care by male providers.

Several significant relationships were identified between the characteristics of the health establishment and the likelihood that the respondent would be asked of her fertility desires and would receive a method of contraception. Women attending health establishments where family planning information materials were on display and where a larger percentage of the family planning methods usually offered were available at the time of the survey were more likely to receive a method of contraception. Both of these results point to the importance of the preparedness of the health establish in providing quality family planning services. The presence of informational materials indicates the health establishment's efforts to inform and educate their clients, while a larger

percentage of family planning methods in-stock suggests the health establishment's ability to provide a range of family planning methods, thus increasing the likelihood that the client will be able to receive her desired method of family planning. Both of these relationships also point to the health establishment's capacity for service provision; the presence of information materials and a high percentage of in-stock family planning methods indicate the health establishment has an organizational infrastructure that is supportive of the provision of family planning services. Two indicators of personnel capacity were also significantly positively related to the outcome: the percentage of staff who offered family planning services and the number of doctors currently working at the health establishment. Again, these indicators suggest a relationship between organizational capacity and the provision of services. Health establishments with more doctors present are obviously more able to provide services than those with limited medical personnel. The influence of the higher percentage of staff that are provide family planning services also points to the health establishments ability to offer a range of service providers. There was a significant positive relationship between the family planning client volume in the month prior to the survey and the outcome. This relationship may reflect a relationship between service quality and popularity, with the better quality services attracting the largest client volumes; hence women are the more popular health establishments may be more likely to receive quality service.

The number of Lady Health Workers (LHW) associated with the health establishment had a significant negative effect on the outcome, a surprising result which is the opposite of the relationship found with the number of doctors at the health establishment. The

LHW program was established to increase the availability of family planning services among rural and urban poor populations, and uses community based health workers (LHW) to deliver information and services. LHWs are community based and often refer clients to health establishments to receive services, and health establishments with a larger number of LHWs on the staff are thus likely to be focused on community distribution of family planning services. Health establishments with a larger number of LHWs present are thus likely to be situated in poor urban or rural areas, and consequently may have poor infrastructures for the delivery of family planning services. Alternatively, higher numbers of LHWs on the staff may reflect the absence of other medical staff at the health establishment, which may reduce the organizational capacity to provide quality family planning services.

Conclusion

The analysis has examined in factors associated with a three stage process in operation at health facilities in urban Pakistan: whether the client has a desire to space or limit childbearing, whether the provider asks the client of their fertility desires, and whether the client then receives a method of contraception. The results highlight that the receiving of a contraceptive method on attendance at a health establishment is the product of characteristics of both the client and the health establishment. At the client level, once the client has surmounted the range of barriers to the access of family planning services in Pakistan, there still exist educational differentials in the receiving of a method of contraception. At the health establishment level, indicators of capacity and preparedness had a significant influence on the receiving of contraceptive methods. The results thus

demonstrate two important issues in the delivery of family planning service in Pakistan. Firstly, there is a direct association of indicators of quality of care on the uptake of contraceptive methods, with uptake more likely at health establishments with greater availability of staff and methods. Secondly, the receiving of a contraceptive method is also strongly influenced by the clients own characteristics. The results thus point to several areas of potential intervention at both the client and health establishment level. Providers need to be sensitized to the differing needs of clients with varying levels of education and of differing parities, while information on family planning can be targeted to women with lower levels of education who currently have lower uptake of contraception. Additionally, gains in service quality can be achieved through efforts to provide diversity in method choice and staff presence, and by improving institutional capacity for service provision.

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Figure One: Factors Influencing the Adoption of a Family Planning Method among Women attending a Health Facility

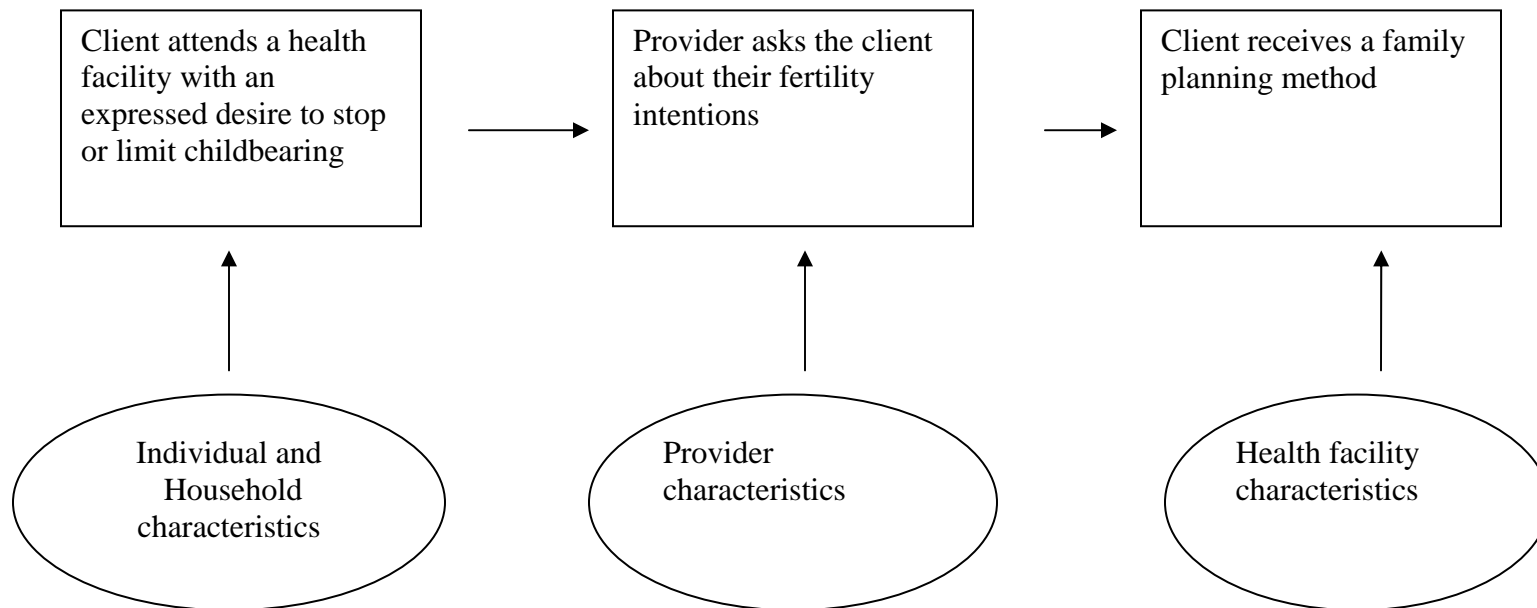


Table 1: Frequency Distribution of Individual, Provider and Health Establishment Characteristics. Figures are percentages unless stated otherwise.

| Individual Characteristics | |
|--|-----------------|
| Parity | |
| 1-2 | 33.4 |
| 2-4 | 36.2 |
| 5+ | 30.4 |
| Education | |
| No education | 35.7 |
| Primary | 6.3 |
| Secondary or Higher | 57.9 |
| Provider Characteristics | |
| Mean number of years experience in family planning | 9.58 (0-35) |
| Percentage of current health providers who have received in-service training | 78.0 |
| Percentage of health providers who are female | 86.0 |
| Health Establishment Characteristics | |
| Member of a franchise network | 40.9 |
| Type of establishment | |
| Public | 42.1 |
| NGO | 7.3 |
| Private | 50.6 |
| Family planning information materials on display | 76.2 |
| Separate area for family planning service delivery | 68.9 |
| Mean Number of FP services being offered | 5.57 (0-10) |
| Mean number of the staff offering family planning services | 6.4 2 (0-29) |
| Percentage of methods usually offered that are available at the time of the survey | 0.72 |
| Number of family planning clients in the month prior to the survey | 213.17 (0-1676) |
| Number of Doctors working at the health establishment | 1.0 (0-38) |
| Number of Lady Health Workers working at the health establishment | 1.0 (0-30) |
| Percentage of all health staff who are medical doctors | 0.18 (0-1) |

Table 2: Logistic Model Results for Receiving a Method of Contraception among Women with an Expressed Desire to Cease or Limit Childbearing.

| | Beta (Standard Error) | Odds Ratio |
|--|------------------------------|-------------------|
| Individual Characteristics | | |
| Parity | | |
| 1-2 | --- | 1.00 |
| 2-4 | 1.61 (0.27) * | 4.98 |
| 5+ | 2.23 (0.29) * | 9.34 |
| Education | | |
| No education | --- | 1.00 |
| Primary | 0.09 (0.24) | 1.09 |
| Higher | 0.58 (0.23) * | 1.77 |
| Provider Characteristics | | |
| Mean number of years experience in family planning | -0.04(0.02) * | 0.96 |
| Percentage of current health providers who have received in-service training | -0.19(0.31) | 0.82 |
| Proportion of female providers | 0.55(0.44) | 1.73 |
| Health Establishment Characteristics | | |
| Member of a franchise network | 0.45 (0.26) | 1.56 |
| Type of health establishment | | |
| Public | --- | 1.00 |
| NGOs | 0.60 (0.38) | 1.82 |
| Private | 0.13 (0.28) | 1.13 |
| Family planning information materials on display | 0.58 (0.27) * | 1.78 |
| Separate area for family planning service delivery | 0.33 (0.23) | 1.39 |
| Mean Number of FP services being offered | 0.04 (0.40) | 1.04 |
| Mean number of the staff offering family planning services | 0.23 (0.06)* | 1.26 |
| Percentage of methods usually offered that are available at the time of the survey | 0.87 (0.33) * | 2.38 |
| Number of family planning clients in the month prior to the survey | 0.001(0.00) * | 1.02 |
| Number of Doctors working at the health establishment | 0.19(0.09) * | 1.21 |
| Number of Lady Health Workers working at the health establishment | -0.25(0.12) * | 0.77 |
| Percentage of all health staff who are medical doctors | -0.99(0.61) | 0.37 |

* Significant at $\alpha = 0.05$