Completing the Demographic Transition in Developing Countries: What does Quality have to do with it?

Sarah Harbison
Office of Population and Reproductive Health
USAID
Washington, DC
sharbison@usaid.gov

March 2005

Completing the Demographic Transition in Developing Countries: What does Quality have to do with it?

Abstract

In the years since ICPD (Cairo, 1994) use of contraceptive services has risen and fertility has fallen to the extent that researchers now talk about "completing the demographic transition" (Bongaarts, Ross, Casterline, Stover and others). In the 1970s and 1980s, the international family planning movement focused primarily on **availability**, and quite reasonably so. Program work, and program research during these years focused on effective ways of building service delivery systems, and on innovative ways of taking contraceptives to the users, such as use of community-based distributors (CBDs) and allowing non-physicians to provide a range of methods. However, in spite of considerable program success unmet need for services persisted in nearly all countries.

A second paradigm which emerged in the seminal work of Judith Bruce in 1989 focuses on **quality of care** of family planning programs. Quality was considered a client right as well as an effective way to address unmet need. In the subsequent decade and a half, researchers have defined the components of the Bruce model and developed methodologies for measuring quality. New program interventions have been designed to improve selected dimensions of quality. The question which follows then is **what impact have these new quality-oriented program interventions had on adoption and continuation of contraceptive use?** In short, how likely is it that efforts to improve quality will fill unmet need for contraception and contribute to the completion of the demographic transition in developing countries? This paper addresses these issues.

I. The Demographic and Contraceptive Transition in Developing Countries

As Ross and Stover (2002, p. 4) have pointed out, "the last twenty years have seen the greatest fertility decline in the history of the world. In the 1980s fertility was high almost every where in the developing world; today high fertility is concentrated in Africa" with evidence of change in most countries there. Several decades ago international donors focused on "helping countries initiate the transition." Today many countries have made substantial progress and the challenge is to meet the needs of the growing number of users with a range of methods from diversified sources.

Fertility rates have dropped dramatically in the developing world as a whole, from 5.7 in the 1970s to about 3.0 (3.5 if China is excluded) in 2000 (Cross, Hardee and Ross, 2002, p.1) and contraceptive use now covers 60% of all couples in the developing world (including China) (Ross and Stover, 2002, p. 5). The momentum of the transition appears strong: once contraceptive use reaches a level of around ten percent it is rare for the upward progress to be reversed (Ross and Stover, p. 5). The graph below highlights the variability in contraceptive prevalence in Africa, and the substantial gains that have been made over the past several decades**. (INSERT Figure 1)**

It is important as we talk about completing the demographic transition to note that there is really a contraceptive-use transition also – a movement from rare, occasional usage to a situation where the use of contraception is consistent, normative, and wide-spread. With this in mind, following Ross and Stover, we define pre-transition countries as countries with prevalence of less than 10%. Early and middle stage transition countries are those with TFRs between 5.99 - 4.50 and 4.50 – 3.00 respectively, but also high levels of unmet need. It is likely that different program components or approaches will have different impacts in countries with differing levels

of overall usage, and different program emphases may be appropriate for programs at different stages of their development.

II. Unmet Need and Unwanted Fertility

A. Levels and Trends

Unmet need for contraception is defined as the desire to delay or limit childbearing combined with the non-use of contraception; the link with unwanted fertility seems clear. Casterline and Sinding (2000) estimate that one fifth to one quarter of all births in developing countries are unwanted. Curtis (2004) has examined total unwanted fertility by preceding contraceptive use status to determine the contribution of non-use, contraceptive failure and discontinuation. **(INSERT Figure 2)** The table above highlights the relatively small role played by contraceptive failure and the relatively important role played by discontinuation.

B. Reasons for Unmet Need

The failure to use a method, or to use a reliable method, or to use it correctly may reflect "program deficiencies as well as attitudinal problems of individuals such as fear, family pressures and community pressures." (Ross and Stover, 2002) Particularly in low prevalence settings, "preferences to avoid pregnancy may are stymied by various constraints and obstacles, most notably fear of health side effects and social opposition (Casterline and Stover, p.12). On the program side, in addition to access issues, deficiencies that have been well documented include poor service quality, lack of appropriate method choice, and poor client provider interaction, including the failure to provide counseling.

Prevalence is a function of both adoption and continuation of contraceptive use, and individuals may fall into unmet need either by failing to initiate use or by discontinuing use when a birth is still not desired. Factors (either programmatic or individual) relating to the failure to

initiate use may be quite different from those relating to discontinuation, and programs aiming to reduce unmet need should address both issues. In general, people move in and out of the users group frequently, with the majority using for only a relatively short interval; discontinuation rates are generally high for resupply methods. (Ross and Stover, 2002).

III. Access and Quality of Services

A. Definitions

The components of quality of family planning services have been broadly discussed in the program literature since the work of Bruce in 1989. She saw quality as consisting of: availability of services, adequate facilities, competent providers, and a range of appropriate methods as key components of quality. There has been considerable debate as to the definition of each of these components; for example, what exactly is an appropriate constellation of services, how many methods are good enough, and what is an appropriate method? (Foreit, 2004). Even accepting the importance of quality, it is also still clear that other factors in overall access to services- the sheer quantity of supply sources or the cost of adopting or continuing as perceived by the client are very important as well.

B. The Conceptual Framework

Jain (1989) has specified the assumptions implied by a quality-oriented focus and developed a framework which links the components of quality to fertility outcomes. He hypothesizes that choice, better information, better client-provider interaction, and an appropriate constellation of services will positively influence both initial adoption and continuation of contraceptive use, contributing to overall contraceptive prevalence and reduced fertility (Sinding and Casterline, 2004). (**INSERT Figure 3)**

C. Interactions among Components

In fact, quality and access often get blurred in discussions. Ross and Stover (2002) focus on access, broadly defined, as a key component of quality. They suggest that dimensions of access include a "service that provides a reasonable range of methods, relatively close to home, at a low cost, in a congenial setting with few barriers." Focusing on one aspect of access, method availability, Ross and Stover point out only 29% of Francophone and 47% of Anglophone African countries provide 5 or more contraceptive methods, while it is 61-65% in North Africa/Middle East and LAC. Clearly a severely limited method mix constrains choice and is a barrier to use. The concept of facility "readiness" is also a dimension which needs to be clarified. RamaRao (2004) defines facilities, equipment, supplies and competency of providers (that can be collected in a survey such as a situation analysis) as "readiness". She distinguishes "readiness" from quality, which is what actually happens in the interaction between the client and the provider.

An additional component of quality which is increasingly being recognized as important is linkages of the family planning service with the community, particularly in very low prevalence settings where contraception has yet to become normative. Linkage with the community may refer to outreach by workers based at a clinic or it may refer community-based delivery of services. In either case, such an approach reduces cultural as well as other access barriers. The challenge is to better understand how the components of quality interact with each other and how they influence the decision to seek contraception, to adopt contraception, and to continue to use. With limited financial and human resources, what is the best investment to increase prevalence and reduce unmet need? Efforts to improve quality may be broad scale

efforts, addressing the health system as a whole or they may focus on a more targeted improvement such as client provider interaction.

IV. Quality of Services, Unmet Need and Client-Provider Interaction

The interaction between the provider and the client is the context in which method selection, counseling, understanding proper method use, counseling on possible side effects and encouraging follow-up occurs. This is an important aspect of quality and it seems reasonable to assume that improved client-provider interaction (CPI) can at least partially address the causes of nonuse, including the lack of necessary knowledge about contraception, health concerns about side effects, and social opposition. Casterline and Sinding (2000, p. 21) suggest that it is factors such as these, rather than inadequate access per se, that are the predominant causes of unmet need, but this is still debated. It remains an open question whether the real obstacles to implementation of lower fertility preferences can be reduced by quality-oriented program interventions. Nevertheless, research on the impact of improving client-provider interaction seems a logical starting place. Once this choice has been made, there are basically two approaches: try to change the behavior of the provider (by far the most common approach) or try to change the behavior of the clients through education and outreach.

A. Provider and Client Skills

An excellent review of studies designed to improve quality of providers is provided by RamaRao (2003a). She reviews the literature on system-wide approaches to improving quality as well as more targeted interventions such as training of providers, training of supervisors, and use of job aids. She finds that all of these approaches, when rigorously implemented, can substantially improve the quality of services. This body of work is important in that it has

documented successful approaches to improving services generally and client provider interaction more specifically. The next step in addressing the question of the relationship between improvements in quality and unmet need is to determine the impact of these improvements on the outcomes of interest – adoption, continuation and method switching. Studies which rigorously address this issue are far fewer in number, but the literature is growing. RamaRao (2003a; 2003b) has also reviewed a number of these, most of which were implemented in the 1990s, highlighting various components of quality that were found to have an impact on adoption and/or continuation.

B. Measuring the Impact of Changes in Quality on Client Outcomes

Studies of the impact of improved quality on contraception have utilized data of a wide variety of types, ranging from anecdotal to cross sectional studies to longitudinal to experimental. These fall into the following several categories.

(1) Non-Experimental Studies

a. Facility Readiness

RamaRao suggests that in looking at the impact of quality on contraceptive use it is helpful to separate readiness of the facility to provide services from the actual service provision, the client provider interaction (2003a, p. 238). In general, relatively weak links are found between a site's **readiness** to provide services and contraceptive outcome measures. An interesting study by Ali (2001) looks at pill use in rural Egypt using DHS data and information from the service availability module. Ali finds that users of pills living in areas with poor access to family planning services were more likely than others to discontinue. Mensch et.al.(1996) analyzing DHS and situation analysis data from Peru constructs an indicator of quality that includes method availability, lack of provider bias

towards a particular method, and absence of restrictions on the provision of particular methods, and finds a positive but relatively small relationship between this index and contraceptive prevalence. A final example, the work of Feyisitan and Ainsworth (1966) in Nigeria found that access, as measured by the distance to the nearest health facility, availability of family planning services at that facility, and availability and price if individual methods was associated with family planning use, but the relationship was not strong. RamaRao (2003a) suggests that these studies, and the literature more broadly, "support the hypothesis that quality of care (actually provided) rather than readiness may be a more relevant determinant of effects on clients behavior (p. 239).

b. Services Provided

Moving then to studies which examine the impact of **quality of service provision** on contraceptive use, including adoption and continuation, in general positive relationships are found. RamaRao cites evidence from Bangladesh, China, the Gambia, Indonesia, Morocco, Niger, the Philippines and Senegal. In Tanzania, Mroz et. al. (1999, p. 240) report that "community perceptions of quality have direct effects on contraceptive use (particularly adoption) after controlling for individual factors." Koenig (2004) looks at data from Bangladesh from 1989-1993. He measures quality based on perceptions of respondents about the quality of fieldworkers, the frequency of contact, the perceived quality of clinic care, and distance to a clinic. He finds that all of these dimensions of quality are positively associated with either adoption of continuation. For example, perceived quality of care of the outreach workers is significantly associated with adoption, and more frequent visits are also associated with adoption. Frequency of visits is associated with lower discontinuation. An interesting finding was that less educated

women (no education, or some primary) were more affected by quality of the fieldworker, concerning adoption, than were more educated women. This study highlights the importance of the outreach component of service delivery on both adoption and continuation; women were being contacted in their homes on a regular basis. It also points to the differential impact of quality on women of different backgrounds.

Focusing on studies which examine continuation, RamaRao finds evidence of a positive impact of quality from studies in Africa and Asia. In particular she finds that clients who are adequately counseled are more likely than others to continue contraceptive use. In a study by Cotten et.al. (1992) in Niger and the Gambia, client-reported quality of counseling is a key factor. In Niger "37% of the women who reported inadequate counseling discontinued use after eight months, while 19% of those who reported adequate counseling had discontinued." (p. 240). A similar finding was reported for the Gambia, where 51% of those who felt they were not adequately counseled discontinued use while the comparable figure for those who felt that they were adequately counseled was 14. A study by Patel et. al. in India (1996) found that women who received expanded counseling and follow-up after an IUD insertion continued significantly longer although they reported more side effects. And of course there is the early, but oft cited study of Pariani in Indonesia which found that women who got their first-choice method continued longer than other women (Pariani et.al., 1991).

The challenge of assessing the overall pattern of relationships is a large one, given the diversity of studies in this area. There are different analytical approaches and types of data used, there is variability in setting and level of program development, different method mixes, and different interventions. RamaRao suggests that although it appears

that quality has a positive influence contraceptive behavior, studies have been limited by "methodological issues ranging from endogeneity, a lack of distinction between measures of readiness and quality of care, and the lack of variation in quality among community members" (p. 78). The literature does point, however, toward the quality of the client-provider interaction, provision of the preferred method if appropriate, counseling on side effects, and follow-up as important factors in adoption and continuation of contraceptive use. The experimental studies which follow focus on this component of quality.

(2) Experimental Studies (intervention studies)

Several relevant experimental studies have been conducted since 2000. These studies involve control and intervention groups, assessment of the extent to which quality has been changed, and a follow up of clients to determine the impact of the treatment on contraceptive behavior. In each of these, a key component of the program is identified which is thought to be related to discontinuation, and which is under the control of program managers. Once the intervention were designed, and protocols developed, baselines of both the provider behavior and of the outcome variables were collected. The service delivery sites were then modified according to design, including training of providers and modification of systems. A key challenge with such efforts is provider compliance with new protocols, necessitating a two-step design. After introduction of the new approach or protocols, provider behavior must be measured to determine whether quality has in fact been improved. Once this has been determined, clients are then followed up to determine the impact of the change in quality on continuation. There are measurement challenges all along the way, including issues of observation of providers and client recall.

The studies are summarized below:

Kim, Young Mi et. al. 2002
Indonesia
Intervention: Individual coaching of clients pre-consultation
Hypothesis: Individual coaching will increase client confidence, questions asked, understanding of method, and satisfaction; and that this will lead to greater continuation of use
Design: Randomized control experiment

Results:

- It is possible to change client behavior significantly;
- More proactive clients ("smart client") have significantly (but not importantly) lower discontinuation (3.9 vs. 7.8%) at 8 months.

Other findings:

- Coaching narrowed differentials by patient type (age and assertiveness), but widened differentials by education and economic class
- Issues of scale, cost and sustainability

RamaRoa, S., 2003
Philippines
Intervention: Training of Providers in family planning, supportive supervision, and refresher courses to improve CPI
Hypothesis: Providers who have received training and improved supervision will provide a better service to clients, provide more appropriate information, and encourage follow-up. This will result in greater continuation.
Design: Quasi-experimental design, measurement of provider behavior pre and post intervention, collection of data from clients pre-intervention, shortly after, and at 16 months post-visit.

Results:

- Quality of care increased, but continuation was not sig. different in the experimental and control areas. (75%) This is a relatively high level to start with.

Other findings:

- When data from control and experimental areas are merged, there is a significant relation between clients' perceived quality of service and continuation.

Leon, F. et. al. 2004
Peru
Intervention: Improved counseling using an algorithm and job aids (the balanced counseling srategy)
Hypothesis: A more structured approach to counseling which identifies clients' preferred methods and provides in-depth information on these as well as a brochure to

take home on her selected method will result in greater client knowledge and knowledge, and greater continuation.
Design: Randomized control, two stage analysis

Results:

- The intervention to improve providers' counseling skills was effective, but compliance with protocols was a problem (only 37 % of providers used the complete protocol). The balanced counseling strategy improved family planning use (continuation at 12 months) but the difference was relatively small in practical terms (81% vs. 78%)

Other findings:

- The intervention may be more important in certain service delivery environments than others; in particular in may be more helpful in small primary health centers than large urban hospitals (where no impact was found).

Adamchak, S. 2004
Egypt
Intervention: Provider training and counseling materials, whole site training, facilitative supervision, clinic readiness and non-monetary rewards; posters for clients
Hypothesis: Improvements in quality at the system and the provider level will lead to greater client satisfaction, knowledge and continuation.
Design: Quasi-experimental

Results:

- Some aspects of CPI improved, clients' contraceptive knowledge increased, satisfaction with service increased. There were no significant differences in method switching, attaining reproductive intentions, or cumulative continuation (66% vs. 68%)

In general these studies found that the interventions succeeded in changing the interaction between the client and the provider, and that change resulted in better client knowledge and satisfaction. However, the impact on adoption and continuation was either not significant, or significant but of very small magnitude. This may be related to initial levels of adoption and continuation. Where continuation is already moderately or very high, changes in quality are less likely to show an impact on these outcomes. Another observation is that both context and user characteristics make a difference. Targeted interventions may have more impact in smaller more rural settings, and certain types of clients may be more influenced by pre-counseling messages than others.

V. Discussion of These Findings

The findings seem surprising at first glance: in experimental studies which substantially improved the quality of client provider interaction there was little impact on discontinuation of contraceptive use, and in longitudinal or cross-sectional studies which looked at a much broader range of components of quality, the results were mixed, but certainly not as strong as would be expected. Methodological issues and programmatic factors provide partial explanations.

A. Methodological Issues

RamaRao (2004) points out that one of the reasons for weak effects is lack of clarity in definitions of quality and measurement of quality. In particular, the collection of data on objective measures of quality as well as perceived quality is important. Many of the cross-sectional and longitudinal studies of the 1990s found generally positive effects but were based on relatively poor designs, and weak measures of quality. In many of these studies it is very difficult to attribute the changes in contraceptive use to specific changes in quality since quality was not measured in a rigorous way and there were so many other factors changing at the same time. RamaRao (2004) also suggests that a reason for relatively small effects of quality on discontinuation in the Philippines experiment could be relatively the relatively small changes in quality, the relatively high initial quality in the control areas, and relatively high pre-intervention levels of use and continuation. Similarly, Foreit (2004) suggests that "the intervention studies of Leon in Peru (2003) and Kim (2002) in Indonesia, did not find significance because of very high levels of continuation at the outset." In addition, the method mix at the outset, in particular use of long term methods, will influence the variability in continuation rates (RamaRao, 2004).

B. Intervention Issues

It is virtually impossible to answer the question, "does quality make a difference", without specifying the breadth and content of the interventions and the programmatic context. This question was addressed in a very specific way in the experiments described above which focused on the style and content of client-provider interaction, and found little impact on continuation. It may be that the expectation of significant impact was overly optimistic, given a fifteen minute interaction with a provider at a clinic, after which the client returns to her community to face a whole range of pressures, interactions, and circumstances which may or may not support her continued use of contraception (Foreit, 2004). Koenig's work in Bangladesh (2004) sheds some light on this issue. His measure of quality included measures of clients' perceived quality but also includes what amounts to a "dosage" measure – the frequency of contact with the field worker. It is also the case that these field workers were moving around the villages and were influencing that context. All of these factors, taken together led to a significant impact on adoption and continuation.

By contrast, program effort scores measure the level of commitment, political, financial, and programmatic to family planning programs in a very broad way, and have been found to be related positively to contraceptive uptake in a number of countries. The measure is very general, and does not refer to an intervention per se but the overall state of a program. It is interesting to note, however, that analysis of the Access component of Program Effort Scores by Curtis (2004) shows no relationship with discontinuation.

On a slightly less broad level are system-wide interventions which aim to strengthen processes by which services are made available – improvement of a logistics system, strengthening of a training system and posting of staff, and upgrading of facilities are examples of system-wide strengthening. Expansion of the number of methods available in the country as a

whole would also be considered a system-wide intervention, and has been shown to be related positively to contraceptive use (Jain, 1989).

More targeted interventions include efforts to improve CPI, or to reach clients outside the clinic, or to target underserved groups. While the experiments which aimed to improve client-provider interaction did not show strong results, other targeted interventions designed to reach special underserved groups have shown very strong results. For example, providing quality counseling and services to post-partum and post-abortion women has resulted in substantially increased rates of contraceptive adoption.

C. Contextual Issues

The setting and level of programmatic development where quality improvement efforts have been undertaken vary greatly, and this variability influences the type of interventions which are likely to have impact and the magnitude of that impact on contraceptive use. At early stages in the contraceptive transition, it is important to involve the community in defining and implementing culturally appropriate services. In countries with single digit contraceptive prevalence, where contraceptive usage has not yet become normative, a quality approach will involve addressing cultural constraints, reducing social barriers (one of which may be men), and building in support for continuation and switching. Ruth Simmons' work in Bangladesh (1988) highlighted the importance of female fieldworkers who moved about the community, visiting women in their homes. She found that these women influenced contraceptive adoption, but also changed norms in the community about the roles of women, patterns of mobility, and taking responsibility for their own health decisions.

At low levels of prevalence, placement of the fieldworkers in the communities rather than limiting them to clinics is a key quality intervention. As mentioned previously, the work of

Phillips and others in Navrongo has taken exactly this approach, meeting the constraints to access to services in the community, addressing socio-cultural constraints to use, and working through indigenous community structures. At later stages in program development, where contraceptive prevalence is at moderate or high levels, a different approach to quality improvement may be required to have a significant impact on contraceptive usage. Differentials in education and other socio-economic variables, rural urban residence, and access to infrastructure need to be analyzed to identify subpopulations with unmet need and to identify constraints to use.

D. Process Issues

In addition to the nature and scope of the intervention, the process by which the changes are brought about vary greatly. Targeted interventions in an experimental setting tend to be "inserted" by researchers, working to assure adherence to a protocol so that it will be possible to measure the unique contribution of the intervention to the change in the outcome measures. On the other hand, sometimes broader institutional changes involve the community in a participatory process. This process can lead to greater cultural acceptability of the program changes and the way interventions are developed. The work of the Population Council in Navrongo, Ghana epitomizes this process (Phillips, 2003).

Caldwell (2002), discussing the work of Simmons et. al. (2002) states that the systems paradigm for large-scale programmatic change proposed by Simmons et al may be more appropriate to the research needs of family planning programs in the 21st Century than are the discrete problem-solving models that are represented in most operations research projects conducted in the 20th century." (p. 6). He goes on to state that "operations research may be more useful for introducing marginal improvements in the performance of a program than it is for

guiding the restructuring of an entire organizational system." The question which then emerges is whether addressing unmet need requires restructuring of an entire delivery system, or marginal program improvements. It clearly depends on the state of development of the system. Caldwell et. al. suggested in 2002 that "the family planning frontier will be in sub-Saharan Africa, for which radically new types of programs may need to be developed." A related question is what ways of conducting programmatic research increase the likelihood of broad-scale application of results.

VI. Conclusions: Quality and Meeting Unmet Need

Returning to our original question concerning what quality has to do with completing the demographic transition, the answer depends on "how easily unmet need can be converted into use of contraception," and this depends on the nature and strength of the obstacles preventing implementation of fertility preferences, the extent to which those barriers can be reduced by programmatic interventions, an the programmatic alternatives. For example, commercial market strategies may be particularly appropriate for making contraceptives available in more advanced programs where growth in prevalence seems to have stalled, but they also have been implemented successfully in less developed programs where government infrastructure is weak. The issue of costs is an important one and has only been touched on here. In 1990 Potts suggested that the real constraints to use of contraception were cost and access, and that the challenge to programs is to identify real costs to individuals, reduce those costs and make a range of methods widely accessible. This of course implies identifying those most in need, and reaching them with appropriate, inexpensive services. Legal barriers as well may need to be addressed to improve access. Laws may limit the range of methods provided and policies may limit which providers are allowed to provide which method. Finally, many researchers

(including Caldwell et.al, 2004) have emphasized the importance of the "diffusion of the idea of fertility control and its practice." This normative change is essential in reducing the social costs of fertility regulation, and can be promoted in a wide range of ways. All of these factors clearly can limit contraceptive use, but really have more to do with access than quality per se.

In sum, quality of client-provider interaction is important for a number of reasons, not the least of which is the right of the client to competent, appropriate treatment, but this factor alone does not appear to be strong enough to meet the challenge of unmet need in developing country programs and providing the impetus to completing the demographic-contraceptive transition.

Bibliography

Ali, M. 2001.
Quality of Care and Contraceptive Pill Discontinuation in Rural Egypt. *Journal of Biosocial Science* 33(2): 161-172.

Ali, M. and J. Cleland. 1999
Determinants of Contraceptive Discontinuation in Six Developing Countries. *Journal of Biosocial Science* 31: 243-360.

Ali, M. and J. Cleland. 1995.
Contraceptive Discontinuation on Six Developing Countries: A Cause-Specific Analysis. *International Family Planning Perspectives 21:92-97.*

Arends-Kuenning, M. 2002.
Reconsidering the Doorstep Delivery System in the Bangladesh Family Planning Program. *Studies in Family Planning 33(1): 87-102.*

Blanc, A.K., S.L.Curtis, and T.N. Croft. 2002.
Monitoring Contraceptive Continuation: Links to Fertility Outcomes and Quality of Care. *Studies in Family Planning* 33(2): 127-140

Bongaarts, J. 2003.
Completing the Fertility Transition in the Developing World: The Role of Educational Differences and Fertility Differences. New York: The Population Council, Policy Research Division Working Paper 177.

Bruce, Judith. 1989.
Fundamental Elements of Quality of Care: A Simple Framework. New York: Population Council Working Paper 1.

Caldwell, J., J. Phillips, and Barkat-e-Khuda. 2002.
The Future of Family Planning Programs. *Studies in Family planning* 33 (1): 1-10.

Casterline, J. and S. Sinding. 2000.
Unmet Need for Family Planning in Developing Countries and Implications for Population Policy. New York: The Population Council, Policy Research Division Working Paper 135.

Cotton, N. et. al. 1992.
Early Discontinuation of Contraceptive Use in Niger and the Gambia. *International Perspectives in Family Planning* 18(4): 145-149.

Cross, H., K. Hardee, and J. Ross. 2002
Completing the Demographic Transition in Developing Countries. Washington, D.C.: The Futures Group.

Curtis, S. 2004.
Introduction to Expert Meeting on Quality of Care and Contraceptive Discontinuation. Unpublished presentation.

Feyisetan, B. and J. Casterline. 1999.
Fertility Preferences and Contraceptive Change in Developing Countries. New York: The Population Council Policy Research Division Working Paper 130.

Foreit, James. 2004.
Presentation to Expert Meeting on Quality of Care and Contraceptive Discontinuation. Unpublished Meeting Report.

Kim, Young Mi et. al. 2002.
Increasing Client Participation in Family Planning Consultations. Washington, D.C.: The Population Council, Frontiers Project, final report.

Koenig, M. S. Ahmed, and M.B. Hossain. 2004.
Quality of Care and Contraceptive Behavior: Further Evidence from Longitudinal Data in Bangladesh. Unpublished Manuscript.

Leon, F. et. al. 2004.
One Year Impacts of Quality of Care Improvements Achieved in Peru. Washington, D.C.: The Population Council, Frontiers Project.

Mensch, B. et. al. 1996
The Impact of Quality of Family Planning Services in Contraceptive Use in Peru. *Studies in Family Planning* 27(2): 59-79.

Mroz, T. et. al. 1999.
Quality, Accessability and Contraceptive Use in Rural Tanzania. *Demography* 36(1): 23-40.

Pariani, S. et. al. 1991.
Does Choice Make a Difference to Contraceptive Use? Evidence from East Java. *SFP* 22(6): 384-390.

Patel, D. et. al. 1999.
The Effects of Service Quality on IUD Continuation among Women in Rural Gujarat. *Studies in Family Planning* 22(6): 384-390.

Population Council. 2002.
Philippines and Senegal Quality of Care. Washington, D.C.: Population Council Frontiers Program, OR Summary 30.

Population Council. 2004.

Quality, Calidad, Qualite. Linking Reproductive Health to Social Power. New York: The Population Council.

Population Reports. 2003.
Improving Client-Provider Interaction. Baltimore, Md.: The Info Project, JHU, Volume 31 (4).

Potts, M. 2000.
The Unmet Need for Family Planning. *Scientific American*. Jan. 3000: 88-93.

RamaRao, S. et. al. 2003a.
The Link between Quality of Care and Contraceptive Use. *IFFP* 29(2): 76-83.

RamaRao, S. and R. Mohanam. 2003b.
The Quality of Family Planning Programs: Concepts, Measurements, Interventions, and Effects. *SFP* 34(4): 227-248.

Ross, J. E. Abel, and K. Abel. 2004.
Plateaus During the Rise of Contraceptive Prevalence. Washington, D.C.: The Futures Group Policy Working Paper Series No. 10.

Ross, J. and J. Stover. 2002.
Trends and Issues Affecting Service Delivery over the Next Decade. Unpublished manuscript prepared for USAID, OPRH.

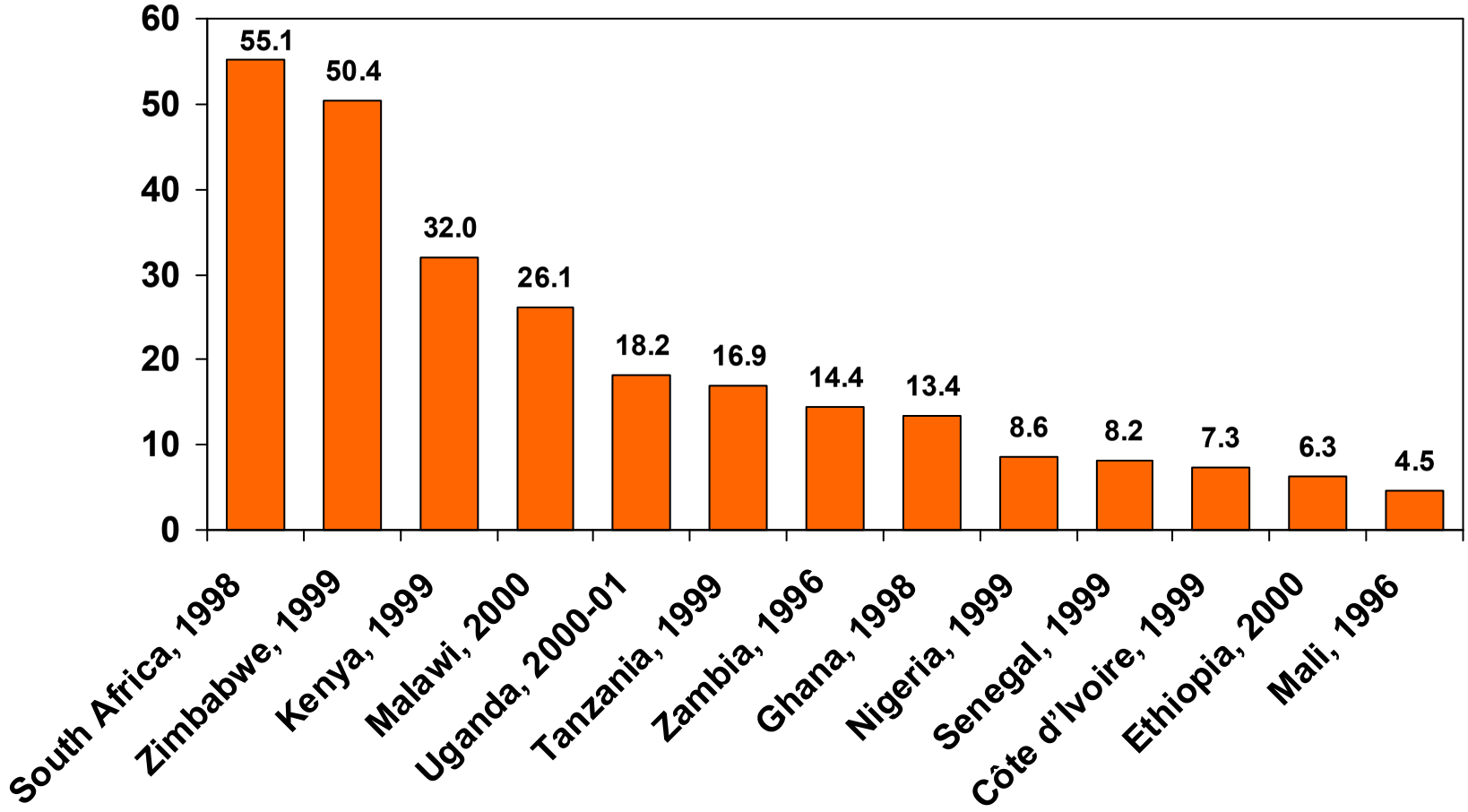
Simmons, R., J. Brown, and M. Diaz. 2002.
Facilitating Large Scale Transitions to Quality of Care. *Studies in Family Planning* 33(1): 61-75.

Simmons, R. et. al. 1988.
Beyond Supply: The Importance of Female Field Workers in Rural Bangladesh. *Studies in Family Planning 19(1):29-38.*

Steele, F. and S. Curtis. 2003.
Appropriate Methods for Analyzing the Effects of Method Choice on Contraceptive Discontinuation. *Demography* 40(1): 1-22.

Townsend, J. 2004.
Client Provider Interaction in Family Planning: Effects and Implications. Unpublished Presentation.

Figure 1. Contraceptive Prevalence Rate (CPR)



Source: Cross, Hardee, and Ross, 2002

Source: Curtis, 2004

Figure 2. Total Unwanted Fertility Rate by Preceding Contraceptive Use

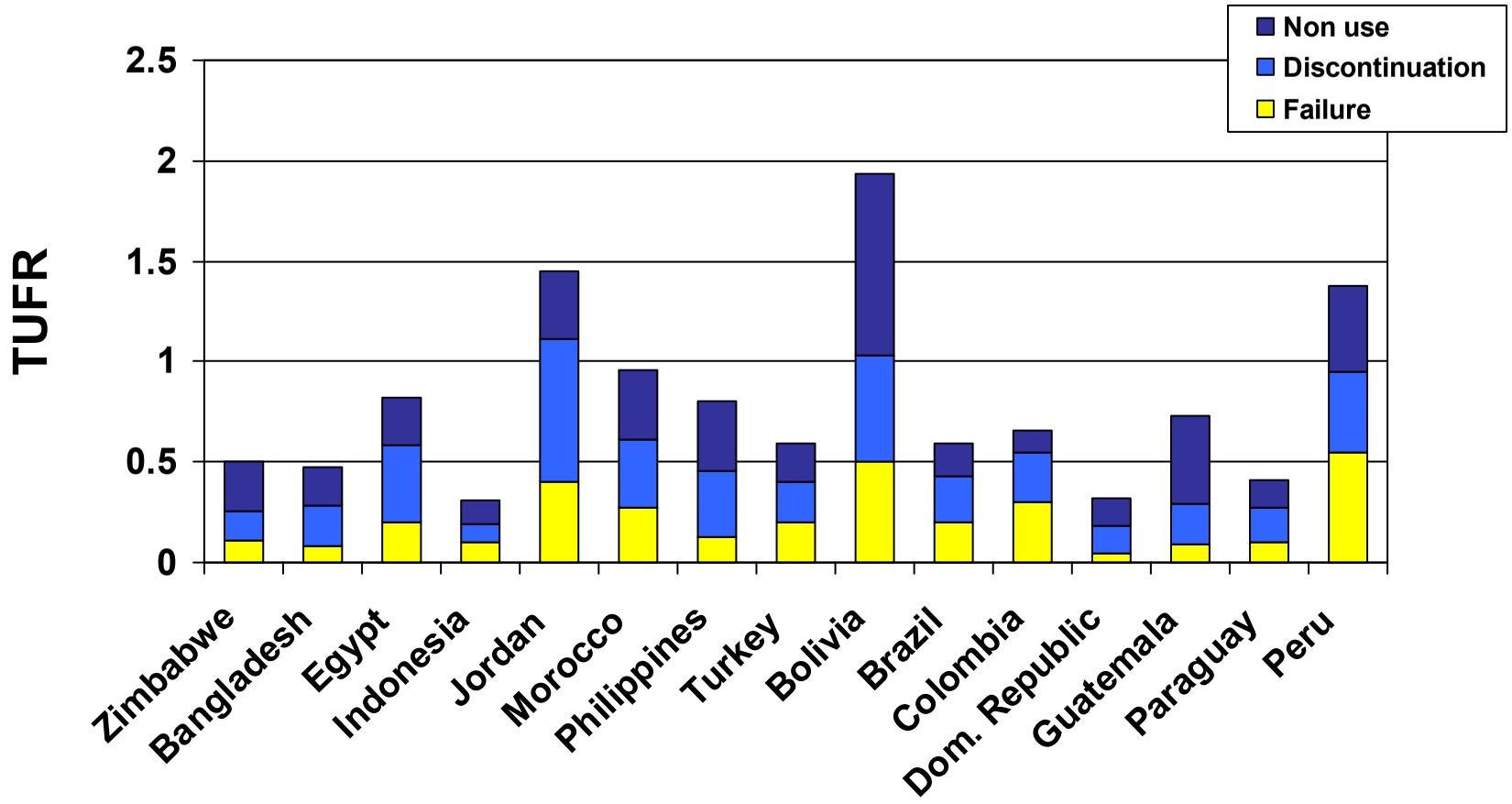
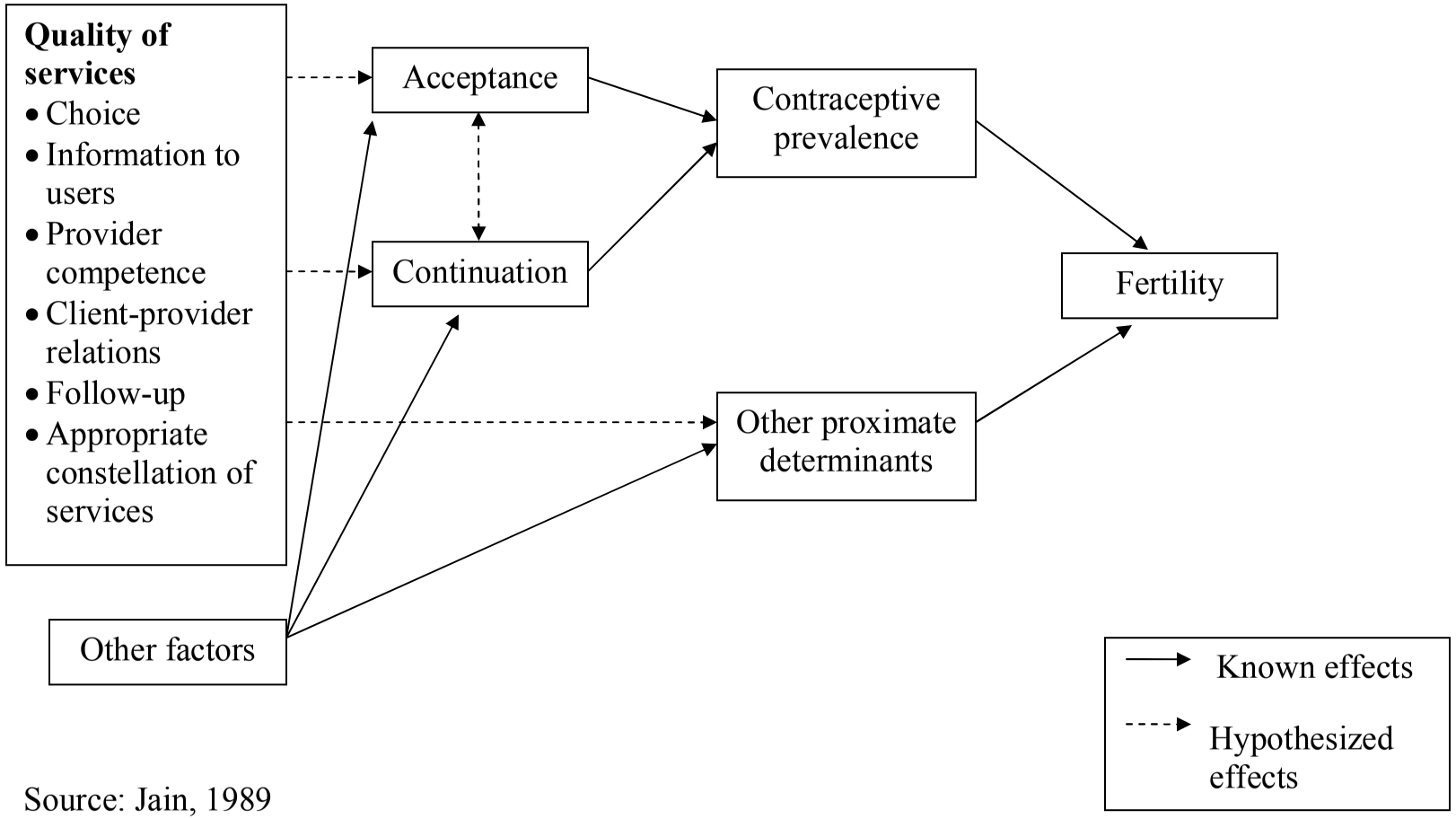


Figure 3. Framework for links between quality of family planning services and fertility



Source: Jain, 1989