

# A Study of Early Stage Contraceptive users in Mozambique

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## ABSTRACT

The USAID-funded Primary Health Care Support Project conducted a study of contraceptive users (n = 672) in six provinces of Mozambique. Findings show that the most widely used contraceptive methods were the pills and the injectables (87.7% of all users), meaning that contraceptive choices were very limited. Respondents believed that a woman should have an average of 6 children, or an indeterminate number ("as many as the husband wants" or "according to God's will"). Catholics and Muslims appeared no less willing than Protestants, or those following traditional religions, or those with no religions to use modern methods. Most (81.1%) respondents reported learning about contraceptives from a nurse. Finally, comparing limited rural community-based distribution of contraceptives (CBD) findings with urban findings, rural users were significantly less educated and literate than urban users, yet their levels of correct use of contraceptives, and satisfaction with their current method, did not differ significantly from urban users. This suggested to policy makers that CBD was a feasible approach to supplying contraceptives in rural areas. (*Afr J Reprod Health* 2000; 4[2]:74-84)

## RÉSUMÉ

**Une étude auprès des débutants dans l'emploi des contraceptifs au Mozambique.** Le Projet de Soins de Santé Primaire, qui est financé par USAID, a mené une étude sur les utilisateurs des contraceptifs (n = 672) dans six provinces du Mozambique. Les résultats ont montré que les méthodes contraceptives les plus utilisées étaient les pilules et les injectables (87,7% de tous les utilisateurs), ce qui veut dire que les choix des contraceptifs sont très limités. Les répondants étaient convaincus qu'une femme doit avoir en moyenne 6 enfants ou bien un nombre indéterminé d'enfants ("autant que veut le mari" ou "selon la volonté de Dieu"). Les Catholiques et les Musulmans n'étaient pas moins disposés que les Protestants ou les pratiquants des religions traditionnelles ou ceux qui n'ont pas de religions, à employer des méthodes modernes. La plupart des répondants (81,1%) ont signalé qu'ils ont appris à utiliser les contraceptifs à une infirmière. En fin, la confrontation des découvertes de la CBD rurale limitée aux découvertes urbaines a montré que les utilisateurs ruraux étaient, de manière significative, moins instruits et moins lettrés que les utilisateurs urbains. Pourtant, il n'y avait pas de différence remarquable quant au niveau de l'emploi exact des contraceptifs et de la satisfaction tirées de leur méthode actuelle par les utilisateurs urbains. Ceci a suggéré aux formulateurs de la politique que la CBD était une approche praticable pour la fourniture des contraceptifs dans les milieux ruraux. (*Rev Afr Santé Reprod* 2000; 4[2]:74-84)

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## Introduction

The Primary Health Care Support (PHCS) Project, a USAID-funded project, implemented by the University Research Corporation, conducted an intercept study of contraceptive users (ISCU) in six provinces of Mozambique. "Central location intercept" studies, developed in marketing research, have been used increasingly in public health in the past 10 years.<sup>1-5</sup> Intercept studies rely on a purposive sample obtained by locating product users at the place of purchase or distribution. Such consumers are typically difficult to locate in sufficiently high numbers through standard probability sample surveys. It would take a random sample of 14,000 Mozambicans to obtain 700 contraceptive users, assuming a 5% contraceptive prevalence.\* Intercept studies are, therefore, quicker and less expensive, since they allow focus only on those from whom information is needed or desired.

A central location intercept methodology provides the advantages of focusing on a specific group of users and locating them quickly for interview. Limitations of the methodology include all the problems encountered when attempting to interview busy and perhaps unwilling subjects in a public place: relatively high rates of noncompliance, or at least sample loss when interviews are not conducted on the spot; lack of comparison groups; and non-projectability of the sample to geographically-based or other naturally-aggregated populations. However, findings can be projected to the "universe", represented by the population intercepted, for example, all users of a particular method of contraception, so long as the intercept methodology is designed to give all consumers an equal chance of selection.<sup>4,7</sup>

The purpose of the present study was to: (1) improve the information base for expansion and

improvement of family planning services; and (2) conduct a preliminary assessment of two pioneer community-based distribution of contraceptives (CBD) efforts in Mozambique, primarily to assess the feasibility of CBD as a means for supplying and teaching about contraceptives in rural areas.

## Methods

The study was initially conducted in five provinces — Gaza, Zambezia, Tete, Nampula and Niassa — between June and July 1996, with a target "sample" of 100 users per province. To locate and interview contraceptive users, it was necessary to locate them at service delivery points. In Mozambique, this meant, for the most part, interviewing users at hospitals and health centres in district capitals and other towns. The urban health units were chosen because they are relatively high-volume service centres, and because they are nationally representative of where Mozambicans obtain contraceptives. Note that "urban" refers to both large cities and relatively small district capitals.

Interviews were also conducted in rural districts of Tete and Maputo Provinces, in order to include rural populations for comparison purposes. Since one of the two CBD programs was in Tete, this province was sampled twice; once for urban users and once for rural users. Seventy-five users in rural Tete Province and 100 users in rural Maputo Province were interviewed. Thus, there was a total of 497 "urban" (town-based or peri-urban) interviews and 175 rural interviews. In all areas, contraceptive users were systematically interviewed using a structured interview schedule. The number of interviews by province is shown in Table 1.

This paper summarises the major findings of the ISCU study.<sup>8</sup>

Table 1 Number of Interviews by Province

Gaza	Zambezia	Nampula	Niassa	Tete	Tete rural	Maputo rural	Total
100	100	100	97	100	75	100	672

\* Mozambique's first demographic and health survey was conducted not long after the present study. Just over 5% of a random sample of nearly 9,000 women was found to use a modern method.<sup>6</sup>

## ***The Situation in Mozambique***

Mozambique is one of the world's poorest countries, with per capita GDP of between 100 and 110 dollars in 1997, and 57% of its GNP from agriculture. Most of the rural population relies on non-wage income from subsistence agriculture. There are 26 distinct ethnolinguistic groups in Mozambique, spread throughout three major cultural areas — the north (where Macua-Chuwabo languages are spoken), the central region (where Shona and Sena languages are spoken), and the south (where Tsonga languages are spoken). Portuguese is the official language, although only 2% of the population speaks it as a first language.

Mozambique had a population of 18,572,000 as of 1997, with the largest proportion residing in Zambesia (3,763,500) and Nampula (3,426,200) Provinces. Until the months following the October 1994 peace accord, over 1.5 million Mozambicans lived as refugees in neighboring countries, and an even larger number were "dislocated" peoples living in camps or other areas within the country's borders. Most of these people have since resettled in Mozambique.

Mozambican life expectancy was 48 years for females and 45 for males. Literacy rate was estimated to be 38% in 1990. The crude birth rate for 1995 was 45.2 per 1000, and the death rate was 18.5 per 1000. Infant mortality remained high, with an IMR of 148 per 1000 births. The population rate of natural increase was 2.67%, and total fertility rate was between 5.6 and 6.1 births per woman.<sup>6,9</sup>

### ***Current Family Planning Policy and Services***

The current or recent government policy in Mozambique, as expressed by the Ministry of Health (MOH), is to promote child spacing in the context of maternal and child health programs. Beyond this, policy is a bit unclear, probably because there have been major changes in health and other government policies in recent years, and these are still in a state of flux. The current government policy of administrative decentralisation has further confused and complicated the locus and lines of authority.

The physician: population ratio in Mozambique is about 1:50,000, with 52% of doctors concentrated in the Maputo area. Only physicians and two categories of highly trained nurses (midwives and

basic nurses with MCH training) can dispense contraceptives other than condoms. Even information about family planning is largely concentrated among these high and medium level health personnel. Since family planning is not a priority for physicians, only about 2–3 nurses per district handle whatever family planning services are available, and nurses at this level usually work only in the district capital.

Family planning services are available through 240 hospitals and health centres in provincial and district capitals. Services are available three times a week for half-day periods, sometimes mornings, and sometimes afternoons. In the central hospitals, family planning services are available daily. Four contraceptive methods are promoted — pills, injectables, condoms and IUCDs. Family planning services are not presently available through the other 704 health posts in small towns serving rural areas.

Most Mozambicans seem to want a relatively large number of children, and this may continue until infant mortality rates decline markedly, when there is greater economic development and urbanisation, improved literacy levels, and culturally sensitive community-based family planning programs are promoted by both the government and NGOs. At the time of the ISCU study, no reliable data on contraceptive prevalence were available, but overall prevalence of modern methods was estimated at about 5%. To summarise the situation of family planning in Mozambique in 1997, we found:

- low contraceptive prevalence;
- high fertility rates;
- high infant, child and maternal mortality;
- few family planning services, which did not extend beyond district hospitals and some health centres;
- lack of awareness about the health (and survival) benefits of child spacing;
- lack of information about contraception, especially in the rural areas;
- lack of information on the MOH side about Mozambicans' knowledge, attitudes, perceptions, barriers to use, reasons for use or non-use of contraception, etc;
- a narrow range of contraceptive choices consisting primarily of pills and injectables; and
- low "demand" for contraceptives.

## **Two Pioneer CBD Programs**

Two pilot CBD programs had been operating in the rural areas for over a year by the time of the study. The one in Tete was being operated by World Vision and was limited to three villages of Changara District. The Maputo program operated in all villages of Namaacha District, and was run by Mozambique's private family planning association, AMODEFA. Both programs relied on local volunteers (*activistas*, or CBD activists), who were supposed to make home visits to teach women about child spacing and contraceptives. These activists were paid a stipend of about \$10 per month and they promoted the use of pills, injectables, IUCDs and condoms. AMODEFA had 62 activists working in Namaacha, while the Tete program had only three. In both programs, there were monthly visits by a nurse and her assistant to villages where activists worked. The nurse provided physical examination of women who wanted to try methods other than condoms. Only nurses could provide pills, injectables and IUCDs, although pills could be re-supplied by CBD activists once a nurse prescribed them.

These seem to have been the only two CBD programs in Mozambique at the time of the study, and both were considered experimental. Since early 1997, other pilot CBD programs had been scheduled to begin in Nampula Province, and perhaps elsewhere, which suggested the need for a national MOH policy concerning CBD.

## **Findings**

### *Characteristics of Respondents*

Given the extremely low contraceptive prevalence in Mozambique, it is interesting to discover who the first users were. Table 2 shows selected background characteristics of the 672 contraceptive users interviewed. Women tended to become interested in child spacing before men, moreover most available contraceptive methods were used by females only. Therefore, it was expected that women would form a majority of users found at service delivery points, although men were also interviewed if found. Altogether, 646 women (96.1% of total) and 26 men (3.9%) were interviewed.

When asked about occupation, most of the respondents identified themselves as housekeepers (48.4%), or peasant farmers (28.9%). Less fre-

quently mentioned occupations were civil servant, vendor, maid, typist, and student. Respondents were mostly married (80.1%), and they had a median age of 27 years. Those who were married or living with a partner had been in such unions for a median of 7.5 years.

Two educational measures were used: how far the respondent went in formal schooling and whether she/he could easily read a newspaper (assessed by self-report). From a breakdown of the educational level by years of schooling or class (not shown on Table 2), most users (67.3%) had completed between first and ninth class, with the largest group (35.6%) reporting to have completed between classes 4 and 6. One hundred and eighty respondents (26.7%) reported having no formal education. As might be expected, respondents in the rural areas appeared less likely to have been educated (beyond class 4) or literate than respondents in urban areas.

Self-reported literacy among contraceptive users was 62.9%, compared with the national female literacy average of 32.5% found in the 1997 Demographic and Health Survey, conducted a few months after the present study and based on a national random sample.<sup>6</sup> Presumably, the first set of women to use contraceptives in any poor, developing country is likely to include those who are better educated and residing in urban areas. By province, literacy among users was highest in Gaza (84%), followed by Niassa (76.3%), Nampula and Maputo (both 53%), and rural Tete (42.7%).

Since religious belief and affiliation can influence contraceptive choice, as well as the decision to use contraceptives at all, respondents were asked about their religious affiliation. The religious profile of the nation is not well known, partly because there had been few national censuses or surveys, and partly because of government discouragement of religion in previous years. There have been estimates of 15% Catholics, 10–15% or more (some say considerably more) Muslims, more Protestants than Catholics, and an even greater number of "Animists".<sup>10</sup> It seems "Zionist" (unaffiliated, Protestant-type sects) and evangelical Protestant churches from neighboring countries like South Africa, Swaziland, Zimbabwe, Zambia and Malawi are finding many converts in Mozambique. Zionists make up the largest single religious group (35%) among users in Maputo, a district bordering Swaziland.

Table 2 Selected Background Characteristics of Respondents

	Total N=672	%	Urban total N=497	%	Rural total N=175	%
<i>Female</i>	646	96.1	471	94.8	175	100.0
<i>Male</i>	26	3.9	26	5.2	0	
		100.0		100.0		100.0
<i>Education</i>						
0-6 years of schooling	520	77.4	359	72.2	161	92.0
7+ years of schooling	152	22.6	138	27.8	14	8.0
		100.0		100.0		100.0
<i>Literacy</i>						
Literate	423	62.9	338	68.0	85	48.6
Non-literate	249	37.1	159	32.0	90	51.4
		100.0		100.0		100.0
<i>Marital status</i>						
Single	92	13.7	66	13.3	26	14.9
Married	539	80.2	407	81.9	132	75.4
Other (i.e., widowed, separated)	41	6.1	24	4.8	17	9.7
		100.0		100.0		100.0
<i>Religion</i>						
Catholic	244	36.3	203	40.8	41	23.4
Muslim	104	15.5	104	20.9	0	-
Protestant	133	19.8	75	15.1	58	33.1
Others	104	15.5	67	13.5	37	21.1
None reported	87	12.9	48	9.7	39	22.3
		100		100.0		100.0
<i>Occupation</i>						
Housekeeper	325	48.4	300	60.4	25	14.3
Farmer	194	28.9	66	13.3	128	73.1
Servant	18	2.7	18	3.6	0	-
Trader	28	4.2	15	3.0	13	7.4
Maid	17	2.5	13	2.6	4	2.3
Business	6	0.9	6	1.2	0	-
Civil servant	33	4.9	33	6.6	0	-
Laundry	5	0.7	5	1.0	0	-
Typist	22	3.3	21	4.2	1	0.6
Student	10	1.5	7	1.4	3	1.7
Unemployed	2	0.3	2	0.4	0	-
Other	12	1.78	11	2.2	1	0.5
		100.0		100.0		100.0

\* Median age of respondent = 27 years. Median number of years married/living together = 7.5 years. Median were calculated from grouped data.

The largest group of contraceptive users was found to be Catholics (36.3%), followed by Muslims (15.5%). Taken as a single group, Protestants (including Mazioni or "Zionists") accounted for 19.8% of users. The highest proportion of users who claimed "no religion" was in Tete (rural and urban), though some of them may in fact be following traditional religions.

### *Pregnancy and Childbirth History*

Respondents had a median of 4 pregnancies (mean = 4.6), 4 actual births, and 3 children (mean = 3.5) living at present. As expected, the younger respondents reported having fewer children than the older ones. Also, in accordance with reports from surveys elsewhere in Africa, respondents with higher educational levels were more likely to have fewer children than those with less education.

A little above half of all respondents reported having used their present contraceptive method for less than a year. Users in urban areas were slightly more likely than those in rural areas to be new users. The mean length of use time was about two years. Therefore, most users had been using contraception for only a short time, and it was unclear whether current use of contraceptives would result in a lower number of children during a woman's fertile years. However, child spacing through modern contraception seemed to be occurring, better ensuring maternal and child health and survival, and use of contraception may have been exerting a downward pull on total fertility rates (TFRs) among users.

### *Number of Children a Woman ought to have*

Respondents were asked how many children a woman ought to have. The mean number for numeric responses was 6.1 (median = 6). However, 309 women expressed their answers in non-numeric form, the most common answer being "as many as the husband wants", followed closely by "according to God's will", and then "as many as the woman is able (to bear)", and "as many as the family wants". Of course, these findings came only from a sample of contraceptive users, representing a small fraction of the population of Mozambique. Non-users and men might even have suggested that women ought to have a higher number of children.

### *Contraceptive Awareness, Use and Effectiveness*

In our series of questions about contraceptive awareness, use, and effectiveness, we first asked why the respondent was using a contraceptive method. Up to 77.8% said it was to avoid pregnancy, and 19% said it was to avoid having more children. It is not clear whether the second response was taken to mean not ever having more children. However, 2.8% gave miscellaneous answers and 0.3% did not give any answer. Qualitative research is necessary to further understand why users wish to avoid pregnancy temporarily or permanently.

We then tried to determine which contraceptive methods each respondent was familiar with, giving room for multiple answers. There was high level of awareness of two methods: the pill (95.4%) and the injectables (92.6%). The DHS likewise found these two methods to be best known among the general population (56.4% and 53.3% respectively).<sup>6</sup> Six hundred and twenty seven respondents (93.3% of the total) were able to name two contraceptive methods; 557 (82.8%) were able to name three methods; 253 (37.6%) were able to name four methods; and 101 (15%) were able to name five methods. Users in rural areas cited the condom more often, while users in urban areas were more likely to cite the IUCD and sterilisation. The pill was equally well known among both groups.

The next question asked was which method the respondent herself (or himself) used. The pill and injectables appeared to be the methods in most widespread use, accounting for 89.4% of all users (Table 3). Though pills and injectables were cited most often in both urban and rural areas, urban users mentioned a broader range of methods. When broken down by age categories (not shown), younger women more often reported using the pill, while older women more often used the injectables.

The interviewers also asked a question designed to determine whether or not the respondent was using the method correctly. This meant a "Yes" or "No" assessment, based on a respondent's ability to say how often one needs to take pills or have an injection (the methods that account for 87.7% of all users) correctly, as well as how to use a condom or a foaming tablet, how often to have an IUCD checked, and how to practice the "rhythm"

method. Interviewers were knowledgeable about the correct way to use each of these methods and were, therefore, able to designate right or wrong responses. As shown in Table 4, most users (86%) gave correct answers and 13.7% gave wrong answers, while 2 respondents did not give any answer. There were no significant differences between rural and urban respondents. Older users (over 25 years) were somewhat more likely than younger users to use a method correctly.

**Table 3 Self-Reported Uses of Modern Methods by Residence**

Methods	Total	Users	
		Urban	Rural
Pill	48.5	47.1	52.6
Condom	2.7	3.6	0.0
IUCD	5.8	6.2	4.0
Injectables	40.9	40.3	42.9
Sterilisation	0.1	0.2	0.0
Foaming tablets	1.0	1.2	0.0
Rhythm	0.4	0.6	0.0
Abstinence	0.1	0.2	0.0
Others	0.5	0.6	0.5
<i>Total</i>	100%	100%	100%

**Table 4 Correct Usage of Contraceptives by Residence**

Knows how to use method correctly*	Total	Users	
		Urban	Rural
Yes	86.0	86.3	85.1
No	13.7	13.3	14.9
No answer	0.3	0.4	0.0
<i>Total</i>	100%	100%	100%

\* Based on respondent's ability to correctly say how often to take pills or have injection (the methods that account for 87.7% of all users), as well as how to use a condom or a foaming tablet, how often to have an IUCD checked, and how to practice the "rhythm" method.

### *Satisfaction and Problems with Method*

Table 5 shows respondents' satisfaction with contraceptive method by place of residence. Up to 90.5% of all contraceptive users reported that they were satisfied with their current contraceptive method. However, 72.3% of the respondents also mentioned various problems with contraceptives, usually attributing these misgivings to their spouse. Among problems mentioned by those who claimed not to be satisfied, the only one mentioned more than 6–8 times was that the contraceptive compromised health, or had side effects ( $n = 28$ ). Other comments were that the husband did not like the contraceptive; it did not work; it caused deformities in children or infertility; or that natural spacing was a better option.

**Table 5 Satisfactions with Contraceptive Method by Residence**

Satisfied with method	Total (%)	Users	
		Urban	Rural
Satisfied	90.5	90.6	90.3
Not satisfied	6.8	6.2	8.6
Not certain	2.1	2.4	1.1
No answer	0.6	0.8	0.0
<i>Total</i>	100%	100%	100%

It is noteworthy that there was no difference between rural and urban users in reported satisfaction with current method. Since rural users in this survey were less literate and educated than urban users, the finding on satisfaction also suggests that rural users (rural women) could learn to use contraceptives as well as their urban counterparts, especially when combined with the finding that there is no difference between rural and urban users in use effectiveness.

### *Source of Information about Contraception*

Table 6 illustrates the various sources of respondents' information about contraception. Most respondents (81.1%) reported having learnt about contraceptives from a nurse. No other single source stands out except the CBD activist, who was cited by nearly 40% of rural respondents. In

rural Tete, 32% cited a nurse as the source of information, while an equal proportion cited activists and traditional birth attendants (TBAs) as source of information. Also, 46% of respondents served by the Maputo CBD program cited activists as their source of information.

The overall predominance of nurses as source of contraceptive information can be taken as a measure of how information about contraception is largely concentrated at health units and in health personnel. Indeed, contraceptives were less available beyond hospitals and clinics at the time of study, with the exception of the CBD programs in Tete and Maputo. The DHS found that "sources of obtaining modern methods" were almost always medical personnel (82.2% in the public sector and 9.7% in the private sector), leaving 8.1%, who obtained contraceptives from other sources, including 6.6% who obtained theirs from pharmacies.<sup>6</sup>

The print and electronic media appeared to be greatly under-utilised. While 62.9% of users in our sample were literate, only 1 out of 672 respondents reported learning about family planning from a brochure or any type of printed material.

*Table 6 Source of Contraceptive Information by Residence*

Source of information	Total (%)	Users	
		Urban	Rural
Activists	15.5	7.0	39.4
APEs	1.0	1.2	0.6
TBAs	10.6	6.6	21.7
Nurse	81.1	83.9	73.1
Friend	22.0	23.3	18.3
Family	4.5	4.4	4.6
Neighbours	5.8	5.8	5.7
Radio	3.4	3.8	2.2
TV	1.0	1.4	0.0
Newspaper	0.6	0.8	0.0
Poster	0.0	0.0	0.0
Brochure	0.1	0.2	0.0
Others	1.8	2.4	0.0

### Service Utilisation and Improvement

All health services, including family planning, were supposed to be free in Mozambique for much of

the post-independence period. In recent years, a little user fee had been initiated, but not always collected. Users were asked whether or not they paid for contraceptives, since we heard anecdotal evidence of patients paying an "under the table" fee for medicines at some health units. Only 5 out of 672 urban and rural respondents said they paid. This finding is corroborated by a recent qualitative study conducted in Maputo and its environs, which found that most women had obtained modern contraceptives free (while those who used traditional methods reported paying the traditional healers).<sup>11</sup>

On whether it was difficult for the respondent to access a health unit for family planning services, only 21.9% said yes, but there were expected rural/urban differences: 41.1% of rural respondents reported constraints, versus 15.1% of urban respondents. It must be remembered that our sample is biased in favour of those who reached health units. All respondents were contacted at health units or through two pilot CBD programs, where service providers came to the contraceptive user.

The respondents were also asked a series of questions to learn how family planning services were perceived. Their response showed that 87.8% found services to be "good", and only 1.3% said they are "bad". However, in response to a separate question, 590 respondents (87.8% of the total) offered suggestions for improvement of contraceptive services. These included better supply of contraceptives, better training for assistants to nurses, better training for nurses, home visits (or more of these), more privacy, and lower costs.

On whether a health worker, including a community health worker, had ever contacted the respondent to speak about family planning, most (52.8%) said no, while 47% said yes. This was most likely to have occurred in rural Tete (77.3%) and least likely in Zambezia (29%). In fact, this is far more likely to have occurred in rural than in urban areas ( $p = 0.001$ ), where all rural users were being served by CBD activists. Why did we not find 100% of rural respondents answering yes to this question? Probably this relates to how "health worker" is locally interpreted; CBD activists may be seen as different.

### Discussion

Findings from elsewhere in Africa can shed light on those from the ISCU study in Mozambique and



help suggest policy and program directions. For example, a study in rural Kondoa District, Tanzania, found that the underlying causes of low contraceptive prevalence are found in socioeconomic conditions that foster high fertility, e.g., a subsistence level of production, the high value on children, early marriage, low educational levels, poor distribution of contraception, and the persistence of traditional norms and values. Other specific reasons for non-use of contraceptives included disapproval by husbands, and fear of side effects.<sup>12</sup> Regarding the last reason, Nakato documented a broad range of rumors about the imagined harm of contraceptives in Uganda.<sup>13</sup> A study in Swaziland found at least as many negative perceptions about contraceptives.<sup>14</sup>

Another study in Swaziland showed that continued high infant and child mortality (99/1000, much lower than Mozambique's estimated 160–200/1000) seems to "exert a tremendous pressure on parents to have large families". Moreover, "Womanhood is directly tied to motherhood, and stigma and inferior status are attached to childless women. Contraception carries the fear of childlessness or sterility".<sup>15</sup> A study in Ghana suggests that the survival of infants and children prior to subsequent pregnancies was the major determining factor among several examined associated with longer birth intervals.<sup>16</sup>

Clearly, improvements in child survival, literacy and educational levels of women, employment and empowerment of women, urbanisation, and general economic development would contribute greatly to lowered fertility. Indeed, there has been a debate for many years over the relative contributions of economic development versus the availability and promotion of contraception to fertility decline.<sup>17,18</sup> Most likely, both contribute, and are necessary, if fertility is to decline significantly. However, several studies demonstrate that the most important direct or proximate cause of fertility decline in developing countries is the availability and use of contraceptives.<sup>19</sup>

Regarding availability, studies in Africa show that due to limited clinical outreach, CBD programs are needed if contraceptives are to be widely available.<sup>20,21</sup> A study conducted in Kenya<sup>22</sup> demonstrated that CBD can lead to "a marked decrease in fertility rate and family size within a relatively short period". A recent review observes: "lack of

convenient access to contraceptives represents the primary barrier to the practice of family planning", and concludes that "... CBD has expanded in sub-Saharan Africa and become the single most important family planning innovation".<sup>23</sup> Of course, CBD can have more or less impact, depending on certain factors. For example, a study in Tanzania found that CBD agents who receive monetary remuneration see more clients and generate more couple years of protection than those provided with non-monetary incentives.<sup>24</sup>

Zimbabwe's contraceptive prevalence rate is about 43% of adult women, considerably higher than Africa's average of 14%. This seems to be largely attributed to a strong CBD program emphasising oral contraceptives.<sup>25</sup> Zimbabwe's total fertility rate has declined from 6.7 at Zimbabwe's independence (1980) to 5.3 in 1994. This compares with an average TFR of 5.8 for sub-Saharan Africa.

This is not to suggest that Mozambique does not need contraceptive social marketing (CSM), which in fact may be more cost-effective than CBD, as measured by relative cost of delivering CYPs.<sup>26</sup> In fact, Mozambique already benefits from a PSI-operated condom CSM program, focused on HIV/AIDS prevention. But Mozambique also has a poorly developed commercial distribution structure, and so it will remain difficult to develop fully commercial CSM for the foreseeable future. Yet, CBD programs can evolve into something like CSM programs if they take a more commercial approach.<sup>27</sup>

An intercept study in Ghana, of 522 urban contraceptive users, concluded:

*The major obstacles to greater contraceptive prevalence appear to be a preference for at least 4 children, concerns about the health hazards of modern contraceptives, spousal disapproval, and skepticism about the effectiveness of methods such as foaming tablets and the condom. The general public should be urged to seek family planning advice from competent sources, including pharmacists and chemists, to overcome misinformation.*<sup>28</sup>

This recommendation is fine, as far as it goes, but it must be remembered that most Africans, certainly most Mozambicans, live far from a pharmacy, chemist or a health unit. The general experience in Africa is that contraceptive prevalence will remain low until information and services are brought closer to where people live. Community-based agents ought to, therefore, be trained to pro-

vide information and contraceptives locally, without requiring time-consuming and expensive travel to distant towns. Preliminary findings from the ISCU study suggest that a CBD approach is feasible in Mozambique.

### **Profile of Contraceptive Users in Mozambique**

Establishing a composite profile of contraceptive users during the earliest stages of development of family planning programs and policies in a poor African country has value for program and policy development, both in Mozambique and in other countries in similar stages of development. The average urban contraceptive user that emerges in this study is a fairly young (age 27) woman who has been married 7 years, is fairly well educated by local standards (class 5), and has had a median of 4 pregnancies, 4 live births, and 3 children living at present. Her youngest child is 2 years old. She reports that her husband knows and approves of her use of contraception. She is an unemployed housewife and homemaker. If she has religious affiliation, she is Catholic (41% of urban users were Catholics). She can name four methods of contraception and is using either an oral contraceptive or an injectable. She has been using her current method, which is the first method she has tried, for a year or less. She says she is satisfied with her current method but she can also describe various problems with contraceptives as well as constraints to service utilisation. She learned about family planning from a nurse. She thinks women should begin childbearing at about age 20 and stop at about 42, and have 6 children.

The rural contraceptive user tends to be a farmer rather than a housewife or housekeeper, like her urban counterpart. She has had significantly less formal schooling than the urban user, and self-reported literacy is significantly lower (48.6% versus 68% for urban based users). She has had a median of 5 pregnancies, 4 live births, and 3 living children. The rural user is about the same age (27 years) as the urban user. She is almost as likely to be a "Zionist" (20.6%) as a Catholic (23.4%), or to profess no formal religion (22.3%). She is more likely than the urban user to have learned something about family planning from an activist, TBA or other community-based sources

of information, although nurses remain an important source. She is more likely than the urban user to report difficulty in being able to reach a health unit. She knows someone who uses traditional contraceptive methods and is quite knowledgeable about such methods, although she claims not to have used these herself. She thinks women should begin childbearing at about age 17 and continue until about age 42.

### **Conclusions**

The most widely used contraceptive methods were the pill and the injectables (87.7% of all users), meaning that contraceptive choices were very limited. Respondents believed that a woman should have an average of 6 children, or an indeterminate number ("as many as the husband wants", or "according to God's will"). We see that the number of children desired by respondents is slightly higher than the actual numbers of children Mozambican women have, 5.6 according to the DHS.<sup>6</sup>

Catholics and Muslims appeared no less willing than Protestants, or those following traditional religions or no religions to use modern methods; and most (81.1%) respondents reported learning about contraceptives from a nurse. Comparing limited rural CBD findings with urban findings, rural users were significantly less educated and literate than urban users, yet their levels of correct use of contraceptives and satisfaction with their current method did not differ significantly from urban users. This suggested to policymakers that CBD was a feasible approach to supplying contraceptives in rural areas. Some had argued at the time that CBD activists lacked adequate training to inform women about correct contraceptive use. Of course, the present findings that shed light on CBD-supplied rural areas are limited, and therefore must be regarded as preliminary.

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