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Health Institution Versus Community-Based Contraception Distribution: Does payment for modern contraceptives influence utilization ?

By

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HEALTH INSTITUTION VERSUS COMMUNITY-BASED CONTRACEPTION DISTRIBUTION: DOES PAYMENT FOR MODERN CONTRACEPTIVES INFLUENCE UTILIZATION?

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ABSTRACT

A randomized field trial involving two modes of contraceptive distribution, clinical and community-based, which were again divided into "free" and "paying" subgroups was carried out in four rural service cooperatives (S.C.)(consisting of 4-6 Farmers Associations) of Sululta, Oromia Region, from Oct/92 - Feb/93. The baseline survey revealed no important differences in potential confounders among the selected 8 Farmers Associations (FA) (2 FAs from each S.C.).

Of the total 110 clients, 75 (68.2%) were females while 35(31.8%) were males. After 17 weeks of program intervention the contraceptive prevalence rate was 5.8% at Community Based Distribution (CBD), while 2.6% at clinics. There was a significant difference (p= .043) between paying and free groups in continuation rates. The main reasons for not starting oral pills was lack of knowledge while those in favour of starting were to prevent pregnancy, already having enough children and the need for birth spacing. The majority (80.0%) of male clients started taking condoms to prevent STDs and AIDs.

The high attendance rate of women at CBD sites may be due to easier accessibility and may CBD programs to reach a large majority of the rural population. The increasing trend of continuation, which may be due to value given to paid items, might also help broaden the acceptance of family planning services.

Introduction

Responsible individuals throughout the world have tried to achieve control over conception for centuries (1), but world population continues to grow in an exponential manner. As a consequence, developing countries are affected most at present. Taking Ethiopia as an example, the 1984 census revealed that the total fertility rate (TFR) was 7.5 children/ woman in childbearing age and if this remains constant with no intensive family planning intervention at about 2015 the population of Ethiopia is expected to reach 96 million (2). If this continues Ethiopia will reach a level which exceeds the country's ability to support the population. This alarming situation forced the population planners to find means not on what to do in family planning, but rather on how to do it (1).

Over the last 20 years family planning (FP) services have been extended from health institution level to community-based distribution (CBD)(3,4). Different ways were tried to reach the community with contraceptive methods through various outlets such as social marketing (3). All, in fact, were tried, searching for means which would better be accepted by the target groups. This study tried to evaluate modes of distribution which are more accepted by females in child bearing age and males above 18 years old in Sululta district and also comparing paying and free supply both at clinics and Community

Based Distribution (CBD).

Sululta was a district (awraja) at the start of the study but was recently divided into Sululta and Mullo woredas. Like other rural parts of Ethiopia it has a high Total Fertility Rate (TFR) (7.7 children per woman in child bearing age), high Infant Mortality Rate (IMR) (130/1000 live births), and very low contraceptive prevalence rate (CPR) = 1.8% (5). The people of this district are all Orthodox Christians and have nearly identical cultural characteristics. The three clinics and one health centre in the area may make it relatively better than most remote rural areas. Due to the inability to serve this rural community with low awareness of family planning, designing an intervention study in this area was considered important in educating and examining the community. According to the author's knowledge, there are three community based distribution sites in Ethiopia: Yifatena Temuga (the oldest one); Jimma, and Woliso. There are some significant differences in their approaches. All are trying to make the community aware about the seriousness of problems related to population growth and the need for Family Planning (FP). Trying different approaches may result in finding better solutions. This intervention study was pursued with this intention.

Literature Review

1. Fertility Trends and Population Explosion.

It took humanity from its start until sometime in the early 19th century to reach one billion total people. However, the second billion was added in a little more than one hundred years and the third 30 years after that. The 4th billion came after only 15 years, and in a mere 12 years later the world population reached five billion. The world population is now growing more than 90 million persons a year. All estimations indicate that the population will exceed six billion before the end of this decade (6).

The difference between the population growth in the more developed regions and the less developed regions is dramatic. This imbalance will continue. The population of Africa is expected to grow more rapidly than ever in this decade with an average annual increase of 3%. Never before in the history of humanity has a region been subject to such explosive population growth. Africa is running the risk of doubling its population of 670 million to 1340 million by the year 2015 (6).

The population of Ethiopia at the turn of the 20th century may have been in the range of 11 to 13 million. A population estimate, which for the first time was carried out in 1956 by the Ministry of Interior, estimated that population of the country stood at about

22.1 million. Estimations made by the planning board revealed that the population of Ethiopia was between 17.8 to 21.0 million between 1950 and 1961 with an annual growth rate of 1.5% (7). It is assumed that the population was growing at less than one percent per annum between 1900-1920, and thirty years later in 1950, it reached two percent (7) and 2.9 percent in 1984 (8).

The growth of the Ethiopian population has quadrupled since 1900 and almost tripled since 1950. If the 1980-84 growth rate continues, there will be more than 65 million people by the end of this century and 96 million after 20 years and skyrocket to more than 250 million within fifty years (2).

2. Family planning Services in the past and present in Ethiopia

Traditional practices of contraception have been used throughout history and are still in use today, despite the availability of modern contraception (9,10). However, the rapid rate of modernization, urbanization, and social changes experienced in many African countries makes it difficult to determine how often traditional methods of fertility regulation are still used. In Ethiopia, traditional birth control methods were known and used. The Fetha Negast (Law of the Kings), introduced sometime around the middle of the 15th Century

and applied in Christian Ethiopia, prohibited withdrawal as a means of contraception (11). But breast feeding and postpartum lactation were recognized as traditional ways of birth control.

Modern family planning methods however were not introduced into the country until the 1950's when it was practised by people who were educated abroad. The Family Guidance Association of Ethiopia (FGAE) was founded in 1966 by volunteers who recognized problems of an escalating population growth, the effects of too many children, too early and too close pregnancies and dangers of clandestine abortion (12). Attempts were made to include family planning in the training program at the Public Health College in Gondar about the same time. There was no policy until 1982 when a directive issued by the Council of Ministers was given (13). It was directed to promote the health of mothers and children and Family Planning (FP) services, that enable families to space or delay births, should be offered in all government owned health facilities as part of the maternal-child health-care program. With this start, at present, the contraceptive prevalence rate reached 2% for rural Ethiopia and 4% for urban population (8,14). With national health service coverage of 45%, this clinical provision of family planning services is not sufficient.

3. Magnitude of the Problems

The high fertility in the country, particularly in the rural areas, the very low use of contraceptives and the early age at marriage were findings demonstrated by the Family and Fertility Survey of 1990 (8). The health problems related to high fertility are known to be malnutrition, increased communicable diseases, high maternal mortality, and excessive infant and child mortality (15). These high rates of infant and child mortality encourage couples and individuals to have more children in the hope that some of their children will survive (16,17). Consequently, regulation of reproduction can't be expected to be adopted unless couples and individuals are relatively assured of survival of their children. Thus a substantial decline in the Infant Mortality Rate and Child Mortality Rate must accompany fertility decline (18).

The WHO has estimated that 99% of the 500,000 maternal deaths that occur world wide annually take place in developing countries. Of these, 115,000 - 204,000 result from complications of illegal abortions performed by unqualified practitioners(19). Abortion rates reflect the extent of unplanned and unwanted pregnancies and can, therefore, serve as indicators of the unmet needs for family planning services.

4. Cultural Factors

Perhaps more important than traditional contraceptives are the cultural practices related to reproduction and sexuality that effect fertility. Postpartum abstinence associated with lactation is the most important of these practices in Africa. Breast feeding has a clinically demonstrated contraceptive effect but its importance as a contraceptive is actually greater, since many cultures also discourage sexual intercourse while the mother is breast feeding (9,10). Surveys indicate that lactation and postpartum abstinence are still important in their effect on fertility in some parts of Africa.

Thus, if the benefits of modern contraception (MC) do not outshine the role of traditional practices or, if due to lack of sustainability MC should not be provided to the community, its effect to reduce fertility will be low and will discourage further use by rural mothers (20). Hence, access to modern contraception and its availability are important, particularly in rural villages where the need is high.

The socio-cultural factors in many African countries including Ethiopia act as obstacles to the formulation and implementation of programs to influence population trends. These include:- ethnic, kinship and lineage factors to perpetuate family name; the cultural

values that support early marriages among women and early child bearing that continues until menopause; A large family size traditionally generally commands security and respect (17,21,22,23). Having many children also brings pride to fathers and proof of fertility to mothers; women without children feel scorn; and religious beliefs by some people do not permit use of contraception (18,22). A study on the achieved small family in Nigeria showed that the few innovative women who had insisted on their right to limit their reproduction were regarded by their in-laws and many other people as behaving in a "monstrous" fashion (24). Many more examples can be quoted from other countries but these should suffice.

5. The Challenge

5.1 Barriers

Apart from the problems mentioned earlier and socio-cultural factors there are problems which hinder information and implementation of population and family planning programs. These include (4,25,26,27) :-

- lack of knowledge by the public about modern contraception and their uses;
- lack of communication among wives and husbands on family planning;
- lack of relevant population policies;
- financial constraints;

- inadequate infrastructure;
- lack of data and information;
- misinformation;
- lack of motivation;
- problems of availability and accessibility as well as cost of family planning supplies; and
- problems in distribution of supplies.

5.2. Clinical Based and Community Based Distribution

With all the mentioned problems, most family planning programs patterned themselves in the early 1960s after the clinic-based delivery system that had evolved in the West (28). This clinically based system with its wide array of staff skills and high levels of care and equipment was able to provide an extensive array of contraceptive methods as well as medical back-up in case of serious side effects or complications (26,29). These facilities were primarily located in urban areas and were unable to serve the bulk of the population, who lived in rural, relatively isolated regions. Obstacles to the equitable provision of clinic based services also include lack of funds and shortages and maldistribution of trained health professionals (28). In the 1970's these maldistributions called for an alternative family planning delivery system. This alternative delivery system employs a wide range of procedures to make family

planning services especially contraceptives (usually oral contraceptives and condoms) available at the community level.

Community-based distribution (CBD) systems are non-clinical family-planning delivery systems. These non-clinical delivery systems are designed to minimize service delivery costs and eliminate some of the barriers confronting potential clients under the clinic-based systems -barriers such as distance, cost, administrative problems and ignorance concerning FP methods. The other most important factor for the development of the non-clinical delivery system was the conviction that there is a large unmet demand for FP in rural populations (4).

The CBD systems recruit and train local individuals as contraceptive distributors. Distribution through a community participant offers the advantage of immediate availability of contraceptives and may also provide social and emotional support to an acceptor (4,29). The advantages and disadvantages of the two systems are summarized in Table 1.

Table 1. Advantages and Disadvantages of Clinic-Based and Community-Based Distribution Systems (26):

Characteristics	Clinic Based	CBD
- Accessibility	+	+++
- Operational Cost	+++	+
- Staff Skill level needed	+++	+
- Specialization of equipment and facility	++++	+
- Client record requirements	+++	+
- Delivery of many different interventions	++++	++
- Increased attention to the Community	+	++++
- Adequate systems for the resupply of drugs (to develop)	+++	+
- Ease of effectiveness evaluation	+++	++
- Availability to the needy client	+	+++

\+ = low

++ = medium

+++ = high

++++ = very high

5.3. Charging Fees

Family planning programs serve millions of clients in developing countries, and the number of clients is growing rapidly (3). The Population Crisis Committee (PCC) has estimated that the contraceptive prevalence rate in the developing world will have to increase more rapidly to 75% of fertile age women, or 720 million users, by the year 2000 and estimates that the total cost of services for these 720 million users will be US $ 11.5 billion (3).

As the demand for family planning services continues to increase, governments and donors will find it increasingly difficult to cover the costs of providing these services (3,30). Donor agencies currently allocate only a tiny proportion of total aid for developing countries for FP. Paying by users for FP may therefore be inevitable. At community level the introduction of fees may change compliance depending on the amount charged (31,32). In other countries some studies (33) indicate that continuation rates do not decline when fees for services are introduced. In fact, they show that contraceptive use rates remain the same after moderately priced services are introduced.

In Bangladesh (31) it was shown that willingness to pay depends upon the capacity of the client to pay and the value given to items. Generally, there is relatively

small acceptance when higher prices are charged. The perceived high cost of services was the most common explanation for not seeking health care in a study in Kenya (32). The effect of higher charges to the poorest sector of the population is significant, and even for those on very low incomes, a modest rise in price is likely to reduce use of service substantially. Consequently, those whose needs are the least will continue to attend, and those with greatest needs will be deterred (32). Recently in Kenya, Moses et al. in their study of impact of users fees on attendance found that there had been increased numbers of untreated STDs in the population after introduction of fees for treatment of STD (32). This study was done in an accessible area for the target population and hence the lower attendance may be ascribed to the higher price introduced. As it was also discussed earlier, prices should be acceptable to the average households. Other experiences indicate that introducing fees may actually improve the quality of services and make the client a more responsible contraceptive user (33,34,35). There are still arguments both against and in favour of introducing fees as presented in Table 2. What will be the reaction of communities in a developing country like Ethiopia where there is a high fertility rate and where beliefs and religious practices influence the choice of contraception

Table 2. Some Arguments Against and in Favour of Introducing Fees (33)

Against	In Favour
Family Planning is a human right; it is an essential health service and should be free of charge as a matter of principle Charging fees diverts attention away from social and health goals toward a focus on profit making. Charging fees will prevent poor people from benefitting from family planning services. Clients will stop using the services. Collecting fees is too costly and time-consuming The quality of services will diminish if emphasis shifts to making money Donors may perceive less need for funding and reduce support	1. Governments and Organizations always have to pay something to provide services, and there can never be enough funds to provide all couples with free family planning services. 2. By charging people who can afford to pay, the fees generated can be used to increase the quality and availability of services. 3. Exemptions can be made for the poorest clients, based either on income or on where they live. 4. Clients often value services they pay for more than those that they get for free, as long as those services are of high quality. 5. The collection of fees can provide incentives to clinic staff to maintain high quality services, especially when a portion of the money is used to make improvements in services. 6. If income is used to improve services or clinic conditions, more paying clients will be attracted to the program. 7. Revenues from fees give managers greater flexibility to plan activities, and give them more control over programs and policies.

6. Overcoming the Challenge

In spite of all the socio-cultural and other barriers, a wide array of approaches and delivery systems were developed to tap the willingness of people in reproductive age groups to increase acceptance for family planning. Changes of policies and the delivery systems and strategies used in the introduction of fees were different in different countries (3). Results also may vary from place to place. Potential strategies to overcome the challenges are complex and require more research.

7. Objectives of this study

In this study an attempt was made to explore some of the problems and find possible solutions to them. With these understandings and within the time limitations the following objectives were set:

1. To compare community-based and clinic based modern contraception distribution.
2. To compare free and charged distribution of the contraception, and
3. To compare the compliance of clients.

8. Hypotheses

8.1. Null hypothesis

There will be no significant difference in attendance rate between those of CBD and clinic distribution; and between the Free and Paying groups ($p<0.05$, two sided).

8.2. Alternate hypothesis

There will be higher attendance rates in CBD and in paying groups ($p<0.05$, one sided).

Subjects and Methods

1. Study Design

This was a randomized intervention study which compared distribution of oral contraceptives and condoms at community and health institution levels with charged and free strategies. The study was carried out in Sululta, Selalie Zone, Oromia Region, from October 1992 through February 1993. The capital of Sululta is Chancho which is about 40 kilometres north of Addis Ababa. The study was accepted by the Scientific and Ethical Committee of the Faculty of Medicine, Addis Ababa University.

2. Population

2.1 Source population

Rural child-bearing women (n = 1793) and male adults (n = 2628) in Sululta and Mullo woredas.

i) Inclusion criteria

a. Age: Females 15-49 years and
Males 18 years and above

b. Informed consent by individuals

ii) Exclusion criteria

a) clients who were younger than the desired age and females who were older than 49 years.

b) clients who did not consent

2.2. Study Population

All clients who satisfied the inclusion and exclusion criteria were included in the study.

2.3. Study area

The study was carried out in the former Sululta Awraja (Currently Sululta and Mullo woredas). It has a total population of 130,000. The Awraja has 18 rural Service Cooperatives (S.C.), each consisting of 4-6 farmers associations (FA).

2.4. Sample size Calculation

A sample survey was made and the total number of the population within 5 kilometres radius (= 2 FA) in each village was estimated to be 3000 on average. Of these the mean percentage of child-bearing women was 19% and that of males aged 18 years and above were 28%. Sample size calculation was made with the following assumption (36):

$$n = \frac{[z\alpha\sqrt{2a(1-a)} - Z\beta\sqrt{b(1-b)+c(1-c)}]^2}{d^2}$$

where, alpha = 95%

power = 80%

a = mean CPR after intervention = 4%

b = expected CPR for "paying" groups = 6%

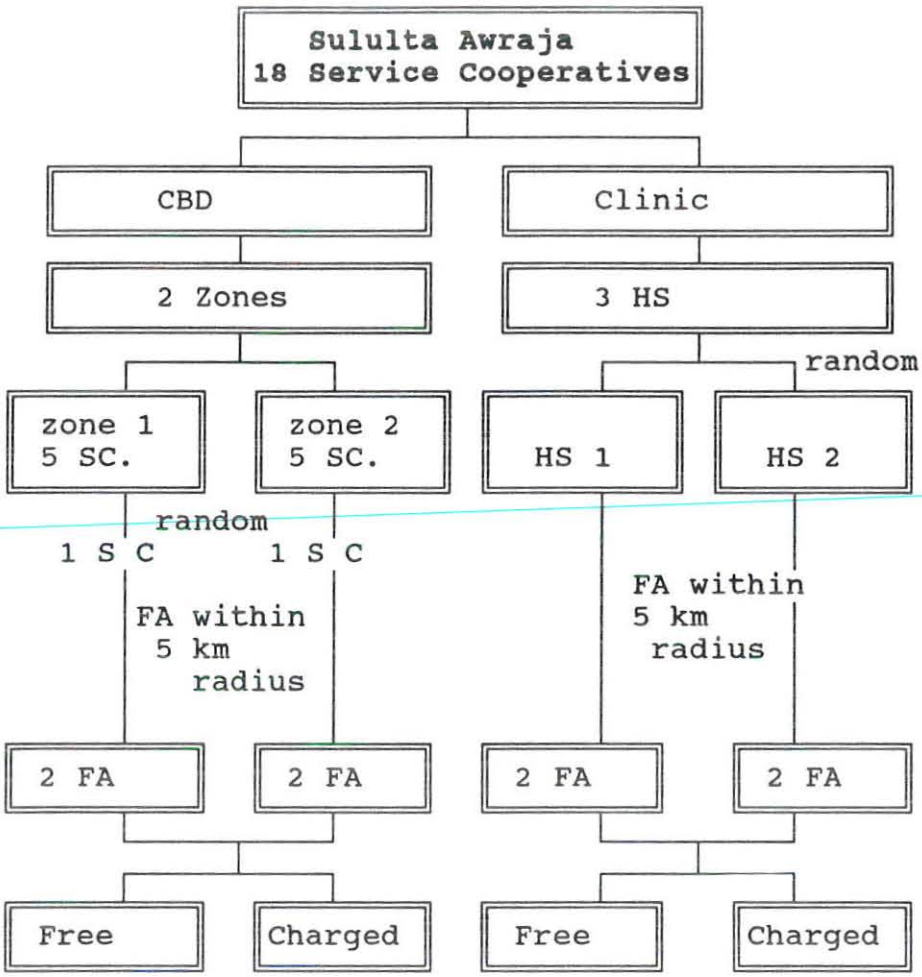
c = expected CPR for "free" groups = 2%

d = difference between the two groups in CPR

therefore n = 377 per group

2.4. Sampling procedure

Of the three clinics two were randomly selected and two FA within 5 kilometres radius were included in the study. Two S.Cs for CBD were randomly selected from two zones which were divided, for this purpose, by their geographical location to avoid contamination of information (Figure 1).



HS = Health station

S.C. = Service Cooperatives = 4-6 FA

FA = Farmers' association

CBD = Community Based Distribution

Figure 1. Study design

3. Measurement

3.1. Measurement of process

The study included questionnaires on factors which were considered to be potential confounders such as education, and important socio-demographic characteristics. The baseline interview was made based on the questionnaires prepared (Appendix A). Clients were provided with modern contraceptives (pills and condoms) on request.

3.2. Measurement of hosts

The outcome measurement was mainly clients compliance and their response to structured questionnaires (Appendix D). Clients compliance was assessed based on the report and the findings observed at each follow-up interval in the different distribution strategies.

4. Intervention

4.1. Modern contraception

This included pills and condoms. The pills included were Microgynon and Eugynon. The condom was the "Sultan" type.

4.2. Payment for contraception

In randomly selected villages payment was required

purpose of the selection of both sexes is to create an appropriate atmosphere for communication due to gender similarity and to facilitate provision of modern contraception.

5.2. Training of the providers.

The providers were trained for two weeks. Theoretical and practical training was given in class and in the health centre
(Chancho) by the principal investigator, district health manager, the head of family planning service of the district and the health team. A training manual was developed for this purpose and training sessions were carried out daily including participation in family planning sessions in the health centre. Lectures, lecture-discussions, demonstrations and dramas were the major tools used during the training program. The training manual included items on:

- vital statistics
- problems of population growth
- child spacing
- family planning methods
- anatomy and physiology
- family planning communications
- community participation
- referral system and check lists.

The tasks learned by the trainees were interviewing; education on child spacing; and using the instruction manual at all distribution sites; registration; provision of modern contraception; follow-up and receiving payment fees in CBD. The providers did a pretest in randomly selected villages. After evaluation of their activities by completing a written exam and monitoring of their performance during their field practice they started distributing contraceptives in their respective villages.

5.3. Pretest

The questionnaire designed to determine the socio-demographic characteristics and items on family planning was pretested. The purpose of pretesting was to determine how to best phrase questions to maximize the likelihood of response and to assess their ease of administration and acceptability and to determine the time required to carry out the interview. With regard to charging fees the role of the pretest was to determine the acceptable cost of one cycle of pills and condoms. After pretesting it was found that 0.50 birr was acceptable price for one cycle of pill or 12 condoms. Minor modifications to the questionnaire were made based on the pretest.

3. To advise concerning side effects such as nausea, dizziness, spotting, weight change, breast tenderness, cramping (20).

5.5. Supervision

Performances of providers at CBD and health assistants at clinics were monitored by the supervisors. This was based on a check list designed for this purpose to identify problems, monitor activities and design appropriate solution for encountered or predicted problems.

5.6. Quality control

Reliability of the collected data was assessed by the principal investigator. Meetings were carried out between supervisors and the principal investigator to discuss and solve problems, to clear any ambiguities or misunderstandings and to provide appropriate solutions.

6. Data Analysis

6.1. Cross-tabulation and chi square test.

The outcome variables were cross-tabulated with selected socio-demographic variables to determine if any association existed. Chi square tests were done where necessary.

6.2 Continuation/survival analysis and Logrank test.

This analysis was necessary because:

a) clients entered follow-up at different times

b) the analysis had to be done before all follow-up could be accomplished. This method is shown in the illustrative example below as:

	month	1	2	3	4
first group	attended	50	40	35	25
	(defaulted)		(10)	(5)	(10)
second group	attended		30	25	16
	(defaulted)			(5)	(9)
third group	attended			20	15
	(defaulted)				(5)
fourth group	attended				10

Of those first visitors (all who came for the first time in all months) (= 110), a total of 50 + 30 + 20 = 100 could potentially return for at least the next visit (10 should not be included). And those who returned for the first time are 40 + 25 + 15 = 80.

Of those second time visitors (= 80), only 40 + 25 = 65 could again potentially attend the next visit (15 should not be included). And those returned for the second time are 35 + 16 = 51 and so on.

Then, for example, to estimate the percentage who

return at least two times, we need to multiply the estimated percentage who returned for first time by the percentage of those who could potentially return a second time who actually did return a second time.

ie. 80/100 x 51/65 = 62.7%.

Further points on the "continuation curve" or cumulative percentage of continuing for successive months are determined similarly by further multiplication of "fractions of fractions". Then comparison between any two continuation curves will be tested using the Logrank test(37) / Mantel Haenzsel test.

Table 3. Comparison of baseline socio-demographic characteristics of Heads of Households in "free" and "paying" groups, Sululta, Oct/92.

Variables	Free	Paying	X^2	P-value
Total population	4730	4660		
Total # HH*	763	752		
Total eligible persons				
females(%)	906(19.2)	887(19.0)		
males(%)	1325(28.0)	1303(28.0)		
Surveyed HH's	195	196		
Sex of HH				
males(%)	174(89.2)	171(87.2)	0.53	0.46
females(%)	21(10.8)	15(12.8)		
Marital status				
married(%)	157(80.5)	157(80.1)	0.73	0.87
widowed(%)	15(7.7)	19(9.7)		
divorced(%)	13(6.6)	12(6.1)		
single(%)	10(5.2)	8(4.1)		
Religion(%)				
Orthodox Christian	195(100)	196(100)		
Occupation				
farming(%)	172(88.2)	170(86.7)	0.48	0.78
sex worker(%)	8(4.1)	11(5.6)		
others(%)	15(7.7)	15(7.7)		

...contd table 3.

Education				
literate(%)**	41(21.0)	47(24.0)	0.33	0.56
Ethnic group				
Oromo(%)	185(94.9)	178(90.8)	1.85	0.17
Amhara(%)	10(5.1)	18(9.2)		
Family size***	6.2	6.2		

* HH = Head of Households

** literate = can read and write

*** Family size = total members in the family per HH

Table 4. Comparison of baseline socio-demographic characteristics of Head of Households at CBD and Clinics. Sululta, Oct/92

Variables	CBD	CLINIC	X^2	P-value
Total population	4690	4700		
Total # HH	757	758		
Total eligible persons				
females(%)	893	900		
male(%)	1312	1316		
Surveyed HH	178	213		
Sex of HH				
males(%)	158(88.8)	187(87.8)	0.02	0.88
females(%)	20(11.2)	26(12.2)		
Marital status				
married(%)	40(78.7)	174(81.7)	3.82	0.28
widowed(%)	14(7.9)	20(9.4)		
divorced(%)	16(9.0)	9(4.2)		
single(%)	8(4.5)	10(4.7)		
Religion(%)				
Orthodox Christian	178(100)	213(100)		
Occupation				
farming(%)	155(87.1)	187(87.8)	0.05	0.97
sex worker(%)	9(5.0)	10(4.7)		
others(%)	14(7.9)	16(7.5)		
Education				
literate(%)	39(21.9)	49(23.0)	2.61	0.10

...contd table 4.

Ethnic group				
Oromo(%)	167(93.8)	196(92.0)	0.24	0.62
Amhara	11(6.2)	17(8.0)		
CPR(%)	0.01	0.01		

Table 5 shows the total number of female eligibles involved in the study, participated in the health education sessions, and the number of clients who attended the distribution sites. The comparison of socio-demographic characteristics between "free" and "paying" groups show no significant differences except in marital status. This may be due to higher attendance of widows in free groups at CBD. The CPR is almost twice at CBD (5.8%) compared to that at the clinics (2.6%), while there was no difference in paying and free groups ie 4.1% and 4.3% respectively.

The female clients who were not charged had a higher attendance rate in the first two months, at both CBD and clinic distribution sites, and thereafter there was a decline (Figure 2). Figure 3 shows that the paying group started with low attendance followed by a remarkable increase with time. The trend of increase in paying groups and somewhat a decrease after second month in free groups are similar for clinics and CBD. The mean age of the female clients are 29.1 and 28.4 in free and paying groups respectively, and 61.5% in free groups and 44.4% in paying groups are between age group 25-34 years.

Continuation/Survival analysis for free and paying groups are shown in Tables 7 and 8 respectively, and their continuation curves are shown in Figure 4. The percentage continuing in the payment groups was higher

than that of the free groups at each month following entry to the study. The Logrank test revealed that there is significant difference ($p<.05$) favouring the paying group in the percent continuing for three visits.

The main reason for not starting pills was "no knowledge" while reasons to start were to prevent pregnancy, having enough children already and the need for birth spacing at both CBD and clinic sites in free and paying groups.

Table 9 shows summary of the general characteristics of male clients in free and paying groups. The mean ages were 25.9 and 27.7 years for free and paying groups respectively. 80% of the total male clients were taking condoms to prevent AIDS and STDs.

Table 5. Female eligibles at the start of the study and clients after intervention.

5.1 Before intervention (Eligible)

	CBD	Clinic	Total
Free	441	465	906
Paying	452	435	887
Total	893	900	1793

5.2 After intervention (Clients)

	CBD	Clinic	Total
Free	27	12	39
Paying	25	11	36
Total	52	23	75

Table 6. General characteristics of female clients in paying and free groups,Sululta, 10/92-2/93.

Variables	free n=39 #(%)	paying n=36 #(%)	X^2	p-value
Marital status				
married	16(41.0)	20(55.6)	8.58	0.03
divorced	12(30.8)	9(25.0)		
single	4(10.3)	7(19.4)		
widowed	7(17.9)	0(0.0)		
Religion				
Orthodox Christian	39(100)	36(100)		
Education				
literate	24(61.5)	20(55.6)	0.08	0.77
Occupation				
housewife	17(43.6)	18(50.0)	0.43	0.80
sex worker	11(28.2)	10(27.8)		
others	11(28.2)	8(22.2)		
Ethnic group				
Oromo	35(89.7)	30(83.3)	0.23	0.50
Amhara	4(10.3)	6(16.7)		
CPR(%)	4.3	4.1		
Continuation rate(%)	59.0	88.9		

Attendance of female clients at Clinics and CBD, Sululta, 11/92-2/93.

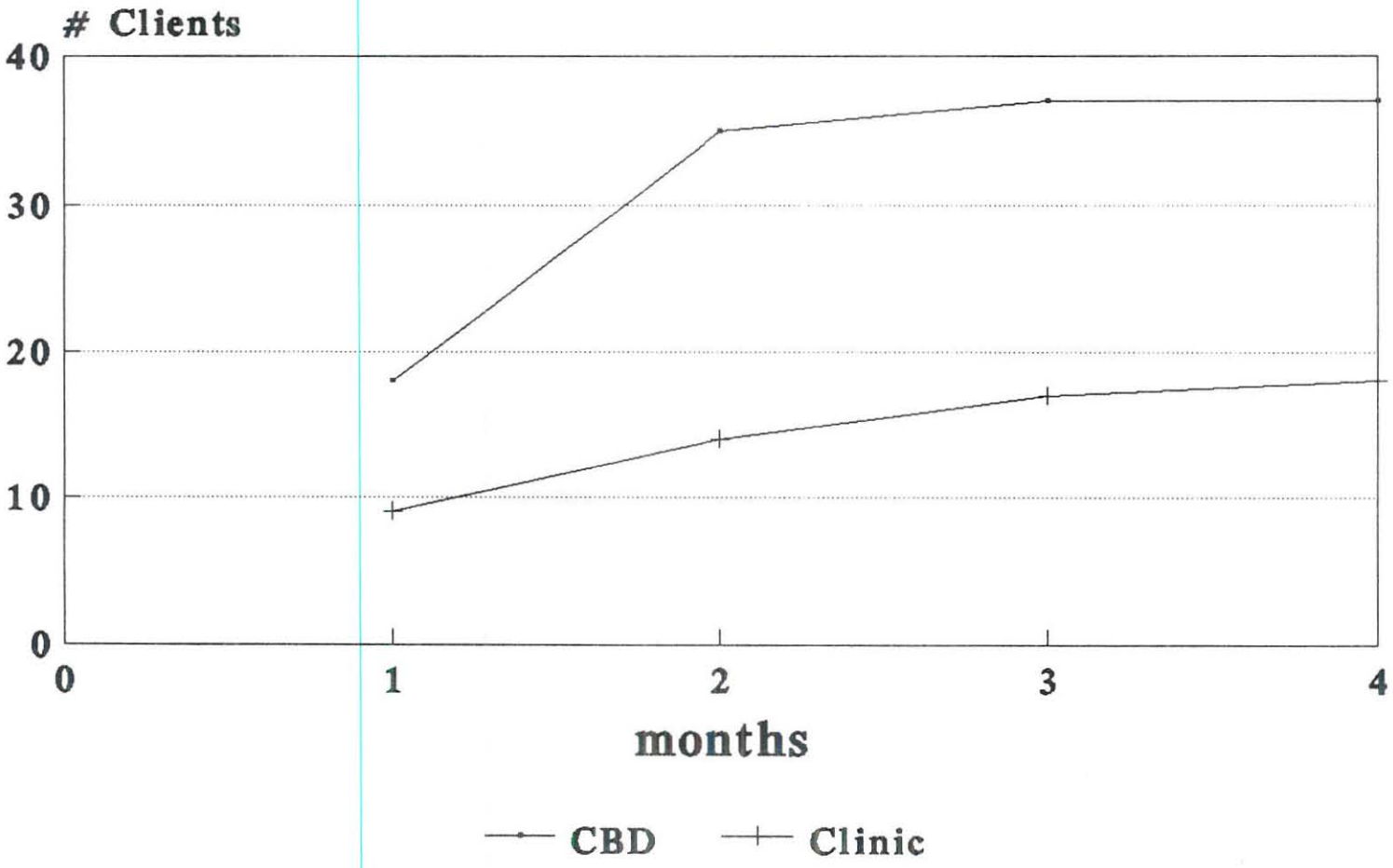


Figure 2

Attendance of female clients in paying and free groups at both sites. Sululta.

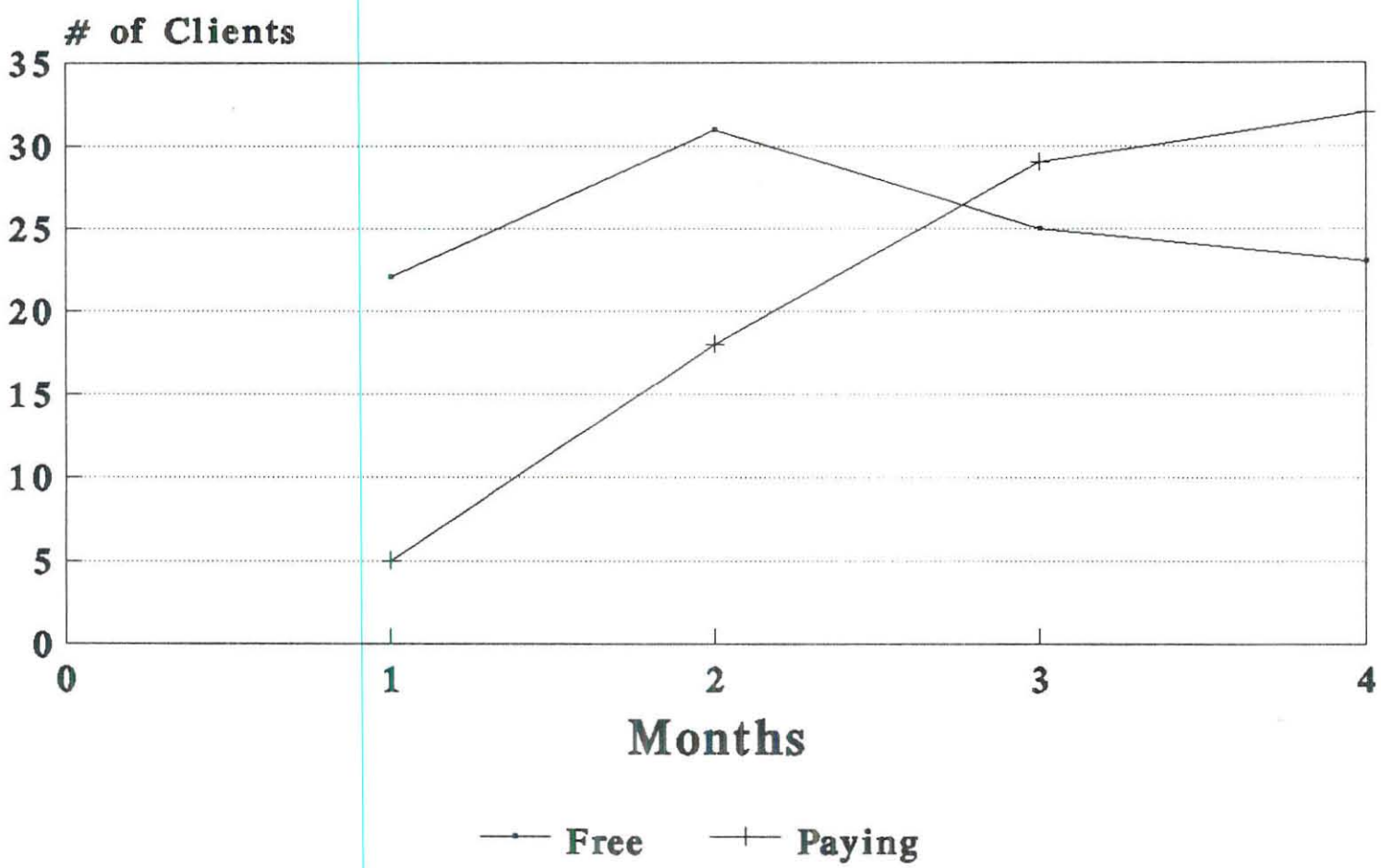


Figure 3

Table 7. Estimated percentage continuing for 1,2, and 3 additional visits for female clients in free groups, Sululta, Oct/92-Feb/93.

months(x) after first visit	potentially could return next	did not return	returned	% who returnd	cumulative % ofcontinuing for monthsx
1	39	10	29	74.4	74.4
2	27*	4	23	85.2	63.4
3	12**	1	11	91.7	58.1

* = 2 of the 29 who returned for resupply visit, entered the study at the last month of the study, and so no further follow up was possible.

** = 11 of the 23 who came for second renewal had only two months of follow up.

Table 8. Estimated percentage continuing for 1,2, and 3 additional visits for female clients in paying groups, Sululta, Oct/92-Feb/93.

months(x) after first visit	potentially could return next .	did not return .	returned .	% who return .	cumulative % ofcontinuing for months x .
1	32	3	29	90.6	90.6
2	18	1	17	94.4	85.6
3	2	0	2	100	85.6

Continuation curves for female clients in paying and free groups, Sululta, /93.

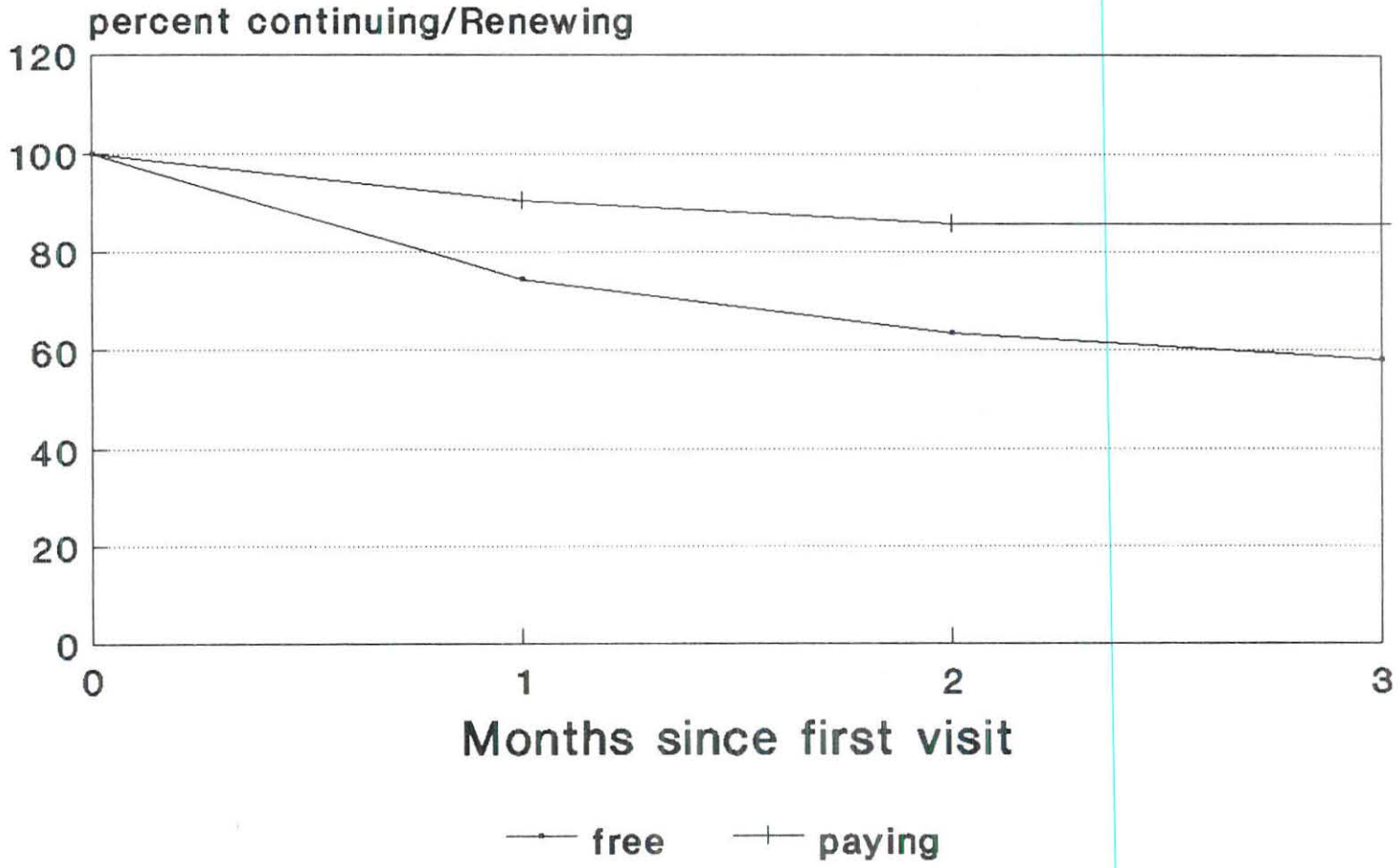


Figure 4

Table 9 Summary of general characteristics of male clients in free and paying groups, Sululta, Oct/92-Feb/93.

Variables	Free n=12 #(%)	Paying n=23 #(%)	X^2	P-value
Marital status				
single	8(66.7)	11(47.8)	1.4	0.50
married	3(25.0)	10(43.5)		
divorced	1(8.3)	2(8.7)		
Occupation				
farmer	4(33.3)	5(21.7)	1.3	0.72
no job	2(16.7)	7(30.4)		
student	3(25.0)	4(17.4)		
others	3(25.0)	7(30.4)		
Ethnic group				
Oromo	12(100)	18(78.3)	3.04	0.21
Amhara	0	4(17.4)		
others	0	1(4.3)		
Religion				
Orthodox Christian	12(100)	23(100)		
Mean age(years)	25.83	27.65		
Reasons to start condoms				
prevent STD/AIDS	10(83.3)	18(78.3)	0.64	0.72
Birth spacing	2(16.7)	5(17.4)		
Prevent pregnancy	0(0.0)	1(4.3)		

Discussion

A randomized field trial involving two modes of contraceptive distribution, CBD and Clinic, with free and paying sub-groups in each mode was carried out in four rural Service Cooperatives (S.C). The baseline survey revealed that there were no important differences in potential confounders in these four S.Cs.

The fact that the overall CPR increased from almost none to 4% is a remarkable finding in such a short time. This may be due to health education, the availability of modern contraception(MC) at both clinics and at the community level, affordability (to charged groups), and accessibility, particularly in the CBD groups. The importance of accessibility in provision and delivery of services was reflected in higher CPR's in CBD groups. It is expected that lack of information, rumours about pills, and husbands' rejection (14,16,25) might lead to a relatively lower attendance in CBD. Husbands' disapproval was about 20%, but 50% favour MC (16). The other factors which might influence use are fear of complications, religious and cultural pressures, and spousal opposition. Lactating mothers also may not visit for MC (23). As Bonita and Clemens (31) in their studies in Bangladesh stated there is relatively small acceptance when higher prices are charged. The effect of higher charges to the poorest sector of the population is

significant (32). Therefore, in this study, considering the potential problem of being too high the minimal amount of money that the low socio-economic sector could afford was determined by a pretest, and through discussions with community leaders and elders. The 0.50 Birr was found to be the acceptable price by the community. The primary objective of most FP programs is provision of the service to enable clients to space births and prevent pregnancy. Hence, availability, accessibility and acceptability are more crucial issues in distributing contraceptives to the needy as long as the acceptable costs are determined. The basic tenets of PHC include provision of services which are accessible, acceptable and affordable and equity of distribution and provision of "treatment" at the earliest time, to the most affected sector of the population by maintaining a sustainable program and self-reliance.

The value given to "paid items" is traditionally higher than "free items" and what is more valued would be highly accepted. This was the case in our study: paying groups had a consistently increasing trend of attendance and continuation. In addressing value issues one should be cautious, particularly in associating higher prices with greater value by the community. It is not that the higher the price the higher the value given by the community without any limits. It might be the contrary,

that, because of economic barriers the poorest members in the villages may be unable or unwilling to pay above a certain level. The main message is that there is a possibility of promoting FP services at community level by enhancing self-reliance and based on the principles of acceptability, accessibility and affordability.

Acceptability is influenced by values and beliefs of members of the community. In societies where the role of traditional culture and religion are very strong, consideration of these aspects is very relevant. However, there was a relatively higher attendance in the "free" than the "paying" group in the first two months. This may reflect the relatively higher felt need for contraception from the clients that might have later declined due to their husbands disapproval. The fact that this group didn't require money for paying for MC might have led the female clients to take the contraception without the approval of their husbands. Free provision may reduce spousal discussion about MC which might have a role in facilitating "consensus". Moreover, if the husband knew it, he may disapprove using MC. This may be the case in this study. On the contrary, maybe charging requires agreement from the husband, who is the major cash earner, and the woman (wife) may inform him. Introducing fees in rural societies may encourage spousal discussion about family planning.

Recently in Kenya (32), Moses et al in their study have shown that there had been increased numbers of untreated STDs in the population after introduction of fees for treatment of STD which was done in an accessible area for the target population and hence the lower attendance may be ascribed to the higher price introduced. As it was also discussed earlier, prices should be acceptable to the average households. The non-attendance of widows in paying groups might be due to this reason. But the increased cost to the mothers in time and work of going to the clinic is often not recognized by health professionals. About half a day's pay is an affordable fee for medical consultation in developing countries and two consultations per year may be an affordable average (31,34,35) implying that such fees should not seriously affect the demand for health services.

The acceptable price was far lower than the actual price of the pills and condoms. This indicates that users should be charged by considering the optimal paying capacity of the population, if they are not exempted from paying.

There was no woman reported for any side effect, this may be due to the short period of intervention.

Several studies have described a positive relationship between women's educational status and MC

usage (10,16,23,27,29). The women who were users had higher literacy levels. Women who have jobs are more likely to use MC than the jobless, students and farmers because of access to information, education, and the need to stay non-pregnant in order to hold their positions (23). The role of education is important even in areas where the percentage of couples currently practising contraception is very low (17). The majority of clients got their information about FP from their friends and health institutions, a finding which is similar in Addis Ababa (16) and Teguletena Bulga, Northern Shewa (23).

The epidemic of AIDS should always be in mind when one is discussing about family plnning. With no cure or vaccine in sight, the only real hope for controlling AIDS now is education that changes people's sexual behaviours. The protection that condoms offer against HIV infection and other STD is an important reason for FP programs to encourage condom use. In fact, as people learn more about AIDS, the demand may increase. Relatively higher numbers of attendance of male clients may be due to the need to protect against HIV was high. The higher attendance in the CBD sites is probably because of accessibility and availability, which in turn would increase the awareness of the community. The higher attendance of male clients in paying groups may be due to giving value to paid items.

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Appendix A

Baseline Survey Questionnaire

1. Date _____

2. Name of village _____

3. House no. _____

4. Sex of head of household (HH)

   0) female 1) male

5. Marital status_____

   1) married 2) single

   3) divorced 4) widowed

6. Family members, NB. ser.no.1. is for HH.

ser. no.	sex	age	education	occupation
1				
2				
3				
.				
.				

Education

1) read only
2) read and write
3) can't read and write
4) grade 1-3
5) grade 4-6
6) grade 7-12
7) grade >12
8) pre school

Occupation

1) farmer
2) merchant
3) house-wife
4) sex worker
5) no job
6) student
7) other

7. Ethnic group_____

1) Oromo

2) Amhara

3) other (specify)

8. Religion_____

1) Orthodox christian

2) Catholic

3) Moslem

4) other(specify)

9. No. of births in the family in the last 12 months_____

10. No. of deaths in the family in the last 12 months age _____ years/ months. sex_____

11. Have you ever heard about modern contraception?

0) no 1) yes

12. If yes, source of first information_____

1) radio

2) friends/ relatives

3) meetings/ health institution

4) other (specify)

13. Which types of contraception do you know ?_____

1) pills 6) calender method

2) condoms 7) withdrawal

3) operative methods 8) traditional methods

4) injections 9) others

5) abstinence

14. Have you ever used any contraceptive methods?_____

0) no 1) yes

15. If yes, which of the above (no. 13) methods did you (or your partner) use?_____

16. Do you or your partner currently use any modern contraceptive method?_____

0) no 1) yes

17. Do you want to know about contraceptives?_____

0) no 1) yes

18. Do you want to practise modern contraception

0) no 1) yes

19. If yes, which type? _____

1) pills

2) condoms

3) others

20. If yes (no.18), why do you want to use?_____

1) child spacing

2) I have enough children

3) mother sickness

4) to limit no. of children

5) economic problem

6) other (specify)

21. If no (no. 18), why don't you use?_____

1) I like to have more children

2) No knowledge

3) afraid of side effects

4) not available

5) due to religious reasons

6) others (specify)

22. How many children do you have? _____

23. How many more children do you need?_____

24. Your annual income

1) in cash _____ Birr

2) cereals _____ (kuntal)

3) grass _____ (kimir)

4) no. of cattle _____

6) no. of (horses, mules, donkeys) _____

7) no. of sheep and goats _____

7) others (specify) _____

Appendix D

Format for Clients

1. Name of village _____
2. Registration No. _____
3. Sex _____ Male _____ Female _____
4. Age _____(Years)
5. Marital Status_____

   1) married 3) divorced

   2) single 4) widowed

6. Educational status_____

   1) Read only

   2) Read and write

   3) Can't read and write

   4) Grade 1-3

   5) Grade 4 - 6

   6) Grade 7-12

   7) Grade > 12

7. Religion_____

   1) Orthodox Christian 2) Catholic 3) Moslem

   4) Other

8. Occupation_____

   1) Farmer 5) Student

   2) Merchant 6) No Job

   3) Housewife 7) Other (specify)

   4) Sex worker

9. Ethnic group_____

1) Oromo 2) Amhara 3) Other

10. How many children do you have?

1) Male _____ 2) Female _____

3) Alive _____

11. Source of first information about modern contraception_____

1) Radio

2) Friend/relation

3) Meetings

4) Health Institution

5) Others specify

12. Have you ever used modern contraception?_____

0)No 1)Yes

13. If yes, how long? _____ months

14. Which type of contraception did you use?_____

15. If no, why?_____

1) I want more children

2) No knowledge

3) Fear of side effect

4) Not available

5) Husband did not allow

6) Due to shyness

7) Religious reasons

8) Others _____

16. why do you want to start now?_____

1) Birth spacing

2) Limit no of children

3) Sickness problem

4) I have enough children

5) Is prevent pregnancy

6) Control STDs

7) Others

17. Have you ever had unwanted pregnancy?_____

0) No 1) Yes

18. If yes, how many times ? _____

19. Have you had any abortion?_____

0) no 1) Yes

20. If yes, how many times?_____

21. In come related questions

Monthly income cash _____

No. of cattle _____

No. of horses, donkeys and mules _____

No. of sheep and goats _____

No. of cereals in Quintal (annual) _____

No. Kimir of grass (annual)_____

Other (specify) _____

Appendix G

Modern Contraception Checklist

Ask any woman who wants contraceptive pills.

If any answer is positive then refer to Chancho Health Centre

Check List

	No	Yes
Is she pregnant?	____	____
(Ask about menstrual period)		
Yellow skin or yellow eyes	____	____
Severe pains or swellings in the legs	____	____
Severe Chest pains	____	____
Excessive shortage of breath after slight exercise	____	____
Bleeding between periods and/or after intercourse	____	____
Severe headaches	____	____
Goitre	____	____