

Testing the Integration of Dual Protection Counseling into Family Planning Clinics in Ethiopia



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Executive Summary

With support from the United States Agency for International Development, EngenderHealth developed an intervention to encourage dual protection counseling in family planning services. The chief component of the intervention is a training curriculum for health care providers. It prepares them to counsel on a broad array of risk-reduction behaviors offering simultaneous protection from the dual risks of sexually transmitted infection (STI) and pregnancy. The options include condom use and a range of alternatives and intermediate steps, ranging from abstinence in young people to communication about STI within married couples. In addition to presenting information on dual protection, the training encourages shifts in providers' attitudes and values clarification regarding sexuality, condoms and dual protection. The training introduces a new counseling approach employing a two-way dialogue designed to enable clients to understand and perceive accurately their own risks for unintended pregnancy and HIV/STI infection. The dual protection intervention also incorporates principles of EngenderHealth's methodologies for facilitative supervision and participatory action planning.

Family Health International (FHI) teamed with EngenderHealth to assess the feasibility and the effectiveness of that dual protection intervention through a study conducted in Ethiopia. The study was designed to assess the effect of the dual protection intervention on family planning service providers' knowledge, attitudes and counseling practices with respect to dual protection, and its ultimate impact on their clients. The study was conducted in 24 family planning clinics chosen from among those already receiving technical assistance from EngenderHealth. The dual protection intervention was implemented in 18 randomly selected clinics, and data collection only was conducted in 6 comparison sites. To assess the effectiveness of the dual protection intervention, interviews were conducted with family planning providers and clients before and 10 months after the introduction of the dual protection intervention. Family planning service delivery was also observed to assess changes in provider performance.

The dual protection intervention's effect was measured in terms of six outcome variables: knowledge, attitudes, and practices on the part of both family planning providers and clients. The outcomes were measured in terms of scores to accommodate multiple relevant items examined through data collection. Intervention effectiveness was assessed by comparing improvements from baseline (pre-intervention) to follow-up (post-intervention) documented in intervention and comparison sites.

The study revealed modest benefits achieved by the dual protection intervention. Improvements attributable to the intervention were noted for three of the outcomes: provider knowledge, provider practice, and client attitudes. Among the most encouraging findings, the intervention resulted in more providers recognizing condoms as an effective contraceptive and engaging family planning clients in a two-way dialogue about risk of STI/HIV. Despite this documented progress, at the end of the study providers performed essential dual protection counseling tasks in only a minority of cases. There was evidence that providers continued to cling to biases that could impede their ability to provide effective dual protection counseling to all their clients. No improvements were noted in clients' practice of dual protection behaviors.

Considering programmatic application of the findings, this study revealed that family planning providers and clients alike could benefit from support to encourage greater practice of dual protection. Providers require training and ongoing support to help them change the way they counsel family planning clients who face the dual risks of pregnancy and STI. Since condom use is a difficult option for many women in stable union, providers must be prepared to offer *comprehensive* dual protection counseling that promotes a full range of risk-reduction alternatives, including intermediate steps on the pathway to actual risk-reduction behavior. Family planning and other reproductive health programs should seek opportunities to incorporate the dual protection instruction into training offered for other purposes, such as pre-service training of family planning providers.

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LIST OF ACRONYMS

AIDS	acquired immune deficiency syndrome
BSS	Behavioral Surveillance Survey
CBD	community-based distributor
CORHA	Consortium of Reproductive Health NGOs in Ethiopia
COPE	Client-Oriented, Provider-Efficient services
DCI	data collection instrument
DHS	Demographic and Health Survey
DP	dual protection
EH	EngenderHealth
FGAE	Family Guidance Association of Ethiopia
FHI/NC	Family Health International/North Carolina
FP	family planning
FS	facilitative supervision
GEE	generalized estimating equation
HIV	human immunodeficiency virus
IEC	information, education, communication
JHU/PCS	Johns Hopkins University/Population Communication Services
MCH-FP	maternal and child health-family planning
MOH	Ministry of Health
NGO	non-governmental organization
OR	operations research
PAP	participatory action planning
RH	reproductive health
SRH	sexual and reproductive health
STI	sexually transmitted infection
UNAIDS	United Nations Program on HIV/AIDS
USAID	US Agency for International Development
WHO	World Health Organization

INTRODUCTION

In today's era of HIV and AIDS, reproductive health services must focus attention on the dual risks associated with sex: unintended pregnancy and sexually transmitted infection (STI), including HIV. Responding to this challenge, the United States Agency for International Development (USAID) joined other international donors in the past decade in sponsoring services promoting the use of dual protection. As a case in point, USAID sponsored EngenderHealth to develop an intervention to encourage dual protection counseling in family planning services. Family Health International (FHI) then teamed with EngenderHealth to assess the feasibility and the effectiveness of that dual protection intervention through a study conducted in Ethiopia. This report describes the dual protection intervention, the assessment methods and findings, and some conclusions regarding the application of the findings to reproductive health services.

Ethiopia was selected for implementation and evaluation of the dual protection intervention chiefly for the practical advantages derived from both EngenderHealth and FHI having field offices in the country. EngenderHealth had substantial experience providing technical assistance to reproductive health programs, and FHI had an in-country team well positioned to conduct operations research.

Other important factors qualified Ethiopia as an appropriate target for a dual protection intervention, particularly one offering prevention education and options to women. First, HIV transmission is a risk to sexually active individuals in the general population. According to UNAIDS, 4.4% of adults (aged 15-49) were infected with HIV at the end of 2003. Of the estimated 1.4 million infected adults, 55% (770,000) were women. In 2002, median HIV infection rates at four antenatal care sentinel sites in Addis Ababa was 15.1% (UNAIDS, 2004). Second, there is substantial opportunity for improvement in knowledge and behaviors favoring risk reduction. The 2000 Demographic and Health Survey (DHS) documented that while 85% of Ethiopian women and 89.5% of men had heard of AIDS, only 17% of women and 36% of men spontaneously mentioned condoms as a way of avoiding HIV infection (DHS 2000). Among married or cohabiting women who had sex in the last year, less than 1% used a condom during last sexual intercourse with their spouse or co-habiting partner. Among women admitting sex with a non-cohabiting partner in the last year, 13% used a condom during last sexual intercourse with that partner (DHS, 2000). A Behavioral Surveillance Survey (BSS) of more than 30,000 people in rural and urban areas of every region of Ethiopia documented similar behaviors. One in five married people in the sample had more than one partner, and almost all respondents reporting unprotected sex with a non-marital partner believed they were *not* at risk for STI/HIV (BSS 2002). These epidemiological and behavioral data indicate that women of reproductive age in Ethiopia are highly vulnerable to HIV and other STIs.

Traditionally, family planning counseling in Ethiopia and elsewhere has focused on contraception methods that are highly effective against pregnancy, but have little or no impact on STI. Clients of family planning programs in Africa have been regarded as low risk for HIV and other STIs because they are typically adult married women. Yet as the data above suggest, not all marital relationships are without risk. STI prevalence among maternal and child health-

family planning (MCH-FP) health clinic clients and antenatal prevalence has been estimated to be as high as 25-30% in some African countries (UNAIDS, 2001). Meanwhile, most family planning clients receive services that give little attention to HIV/STI concerns and rely on inadequate counseling approaches, often limited to providing basic information. Many providers lack knowledge about sexuality, leaving them apt to impose value judgments or to feel embarrassed or uncomfortable when discussing such issues with clients. Further, providers may lack skills in the areas necessary for a comprehensive assessment of HIV risk (Twahir et al. 1996; Askew et al. 1998; Miller et al. 1998).

EngenderHealth's dual protection intervention was designed to address such service delivery weaknesses. Developed in 2002, the model features the training manual "Integration of HIV/STI Prevention, Sexuality and Dual Protection in Family Planning Counseling." That curriculum presents a broad array of dual protection options, including use of condoms for protection against both pregnancy and STI transmission, use of condoms along with other family planning methods or emergency contraception, mutual monogamy between uninfected partners using an effective contraceptive method, and abstinence, including a range of non-penetrative sexual activities as well as delaying sexual debut for young people. In addition to provider training, the dual protection intervention also incorporates principles of EngenderHealth's methodologies for facilitative supervision and participatory action planning. The training manual was successfully field tested in Ghana, Nigeria, and Malawi, but to date no attempts had been made to evaluate the programmatic impact of the comprehensive dual protection intervention.

STUDY GOAL AND OBJECTIVES

The goal of the study was to produce evidence for policy makers and program managers regarding the usefulness of the dual protection intervention for family planning services in Ethiopia. To this end, the study was designed to meet the following objectives:

- To assess the impact of the dual protection intervention on family planning service providers' knowledge, attitudes and counseling practices with respect to dual protection.
- To assess the impact of the dual protection intervention on clients' knowledge and attitudes toward STI/HIV risk and dual protection.
- To assess the impact of the dual protection intervention on family planning clients' adoption of dual protection, including condom use and a range of other risk-reduction practices.

METHODS

Overview of Study Design

The study was conducted in 24 family planning clinics located in the Addis Ababa, Amhara and Oromiya regions of Ethiopia. Clinics targeted for participation were among those that were already receiving technical assistance from EngenderHealth through an initiative to expand and improve the quality of long term and permanent contraceptive services. The dual protection intervention was implemented in 18 clinics, and data collection only was conducted in 6 comparison sites. To assess the effectiveness of the dual protection intervention, interviews were conducted with family planning providers and clients before and 10 months after the introduction of the dual protection intervention to examine whether improvements occurred in knowledge, attitudes, and reported risk behaviors on the part of clients. Family planning service delivery was also observed to assess changes in provider performance.

Sites selection and randomization

The study team established the following eligibility criteria for clinics' participation in the study:

- Previously received COPE¹ training and support from EngenderHealth (to ensure that a basic level of quality of care is practiced)
- Received EngenderHealth training in counseling skills, supervision, infection prevention, medical monitoring and use of quality improvement tools and approaches
- Located in a USAID "Focus Region" or a high HIV prevalence urban area targeted by USAID's Integrated Strategic Plan FY 2001-2006
- Have sufficient number of family planning clients (at least 10-12 per day) to make monitoring and data collection cost-efficient
- Public sites only (reflecting the fact that 77.5% of family planning users are supplied by the public sector)
- Combination of hospital and health centers (reflecting the fact that 74% of users are supplied by hospitals or health centers)
- Combination of high and low population density sites
- Have condoms available for demonstration and free samples
- Condoms are readily available in the community through social marketing

From the list of 34 sites that met the above criteria, 24 clinics were randomly selected using a computerized random number algorithm, stratifying by region so that the participating clinics

¹COPE[®] (client-oriented, provider-efficient services) is an approach and a set of tools that assists healthcare staff to continuously assess and improve the quality of their services. There are four tools: self-assessment guides, client interview guide, client-flow analysis and an action plan. The self-assessment guides contain key questions based on international clinical and service standards.

were proportionate to the total number of eligible clinics in each of the three regions. The selected clinics were then randomly assigned to either intervention or comparison group, with 2 clinics per region being assigned to the comparison group.

EngenderHealth's Dual Protection Intervention

The dual protection intervention tested in this study comprised six components outlined below.

1. Orientation for clinic staff

EngenderHealth conducted half-day orientation meetings at all health centers (both intervention and comparison sites) to explain to the facility director the research study's rationale, its goals and objectives, the proposed activities, and the study procedures. In the intervention sites only, the orientation included a mini-workshop to review the basics of HIV/STI transmission, prevention and dual protection. The workshops served as an opportunity to garner all-staff participation in creating a supportive environment for dual protection promotion. All clinic staff interfacing at any level with family planning clients--including clinicians, senior managers, supervisors, administrative and custodial staff--were invited to attend. In total, 635 staff across 17 intervention sites participated in these sessions. (Logistically it was not feasible to hold the orientation workshop in 1 of the intervention sites.)

2. Staff training to introduce a new model of dual protection counseling

All family planning service providers in the 18 intervention sites were eligible to attend an intensive five-day course on dual protection counseling; 25 providers, mostly nurses, completed the training. The training team comprised two Ethiopian trainers who were instructed on teaching the curriculum by an experienced EngenderHealth staff trainer. The training methodology was based on adult learning principles, with strong emphasis on participatory activities, including individual self-assessments, small group work, games, group brainstorming and role-plays. In addition to presenting information on dual protection, training focused on shifting the providers' attitudes and clarifying values regarding sexuality, condoms and dual protection. The training introduced a new counseling approach employing a two-way dialogue designed to enable clients to understand and perceive accurately their own risks for unintended pregnancy and HIV/STI infection. Providers were also trained to help clients explore their options for protecting their own and their partners' health, to make realistic decisions that are based on their individual needs and the social context in which they live, and to develop the skills to carry out those decisions, including the skills for negotiating condom use with their sexual partners. Participants were actively encouraged to explore critically their own values and beliefs.

3. Job aids to support the counseling model

To improve counseling quality and to encourage communication of new messages, EngenderHealth developed a counseling flip chart to prompt providers to cover all key components of dual protection counseling during each client counseling session. The flip chart was adapted to the Ethiopian cultural context and was translated into Amharic and Afan Oromo. Service providers received instruction on how to use the job aid during supportive supervisory visits. The job aid was worded in such a way as to encourage family planning providers to

explore each key topic with their clients through open-ended questioning, and to discourage them from simply going through the questions in order and ticking off the answers.

Clinics were also given wooden penis models to assist service providers in explaining correct use of condoms. The service provision training included use of these models to help providers feel comfortable using them.

4. Facilitative supervision

Experience has repeatedly demonstrated that formal training alone, unaccompanied by continuing on-the-job support and coaching, has little chance of producing a sustained change in providers' attitudes and practices or of improving the quality of services. An integral component of the intervention, therefore, was developing a facilitative supervisory framework to support service providers in implementing routine dual protection counseling and to improve their communication skills progressively. The facilitative supervisory approach emphasizes the supervisor's role in supporting sustained behavioral change and quality improvement among a team of staff. It emphasizes mentoring, joint problem solving and two-way communication between the supervisor and the provider.

EngenderHealth developed a curriculum for a three-day workshop on facilitative supervision based on the Facilitative Supervision Handbook. The curriculum included the following components:

- Key components of dual protection counseling
- The 'clients rights and staff needs' framework for quality reproductive health services
- Defining facilitative supervision
- Roles and characteristics of effective supervisors
- Effective leadership
- Motivating staff and fostering trust
- Communication skills
- Working with groups, including managing different personality types
- Planning meetings
- Managing change
- Providing male-friendly services
- Dual protection counseling
- Practical skills training in using the dual protection counseling job aid and supervision checklist
- Planning for and follow up of supervisory visits

Following the training, external supervisors were expected to make visits according to their regular schedule. (No extra project resources were allocated for this purpose.) EngenderHealth developed a checklist for external supervisors to use during their visits and for on-site supervisors to refer to on a regular basis. EngenderHealth reported supervisors in all 18 intervention sites submitted supervisory logs, suggesting that supervision did occur. FHI did not have access to the logs to assess the content of the supervision.

5. Participatory action planning

Given the complex socio-cultural context in which sexual decision-making takes place, it was recognized that adoption of a dual protection strategy likely requires far more than a single counseling session with the female partner. The intervention therefore included a process intended to assist health staff to work together in identifying additional activities to complement the counseling intervention. In keeping with the idea of developing a dual protection intervention with the potential of being readily scaled up, emphasis was placed on low-cost complementary activities that could take place within the current service delivery structure. The methodology for this component drew upon EngenderHealth's COPE quality improvement approach.

Two-day participatory action planning workshops were conducted with supervisors immediately following each facilitative supervision training. The supervisors, in turn, were charged with repeating the process with the entire staff working in the family planning unit at their respective facilities. All family planning staff and senior administrators at each intervention site were encouraged to identify creative ways for making the services 'male-friendly' and 'youth friendly' and for attracting men and young people to use them. Each intervention facility received US \$500 to support these activities.

6. Counseling of family planning clients

Providers were supposed to offer both new and continuing family planning clients in-depth dual protection counseling. It was reasoned that the information would be new for initial and continuing clients alike, and all clients could potentially benefit from repeated support for self-assessment of risk and risk-reduction action. The counseling model that providers were instructed to follow included four basic steps:

1) Introduction: Welcoming the client; introductions; assuring confidentiality; helping the client to relax and feel comfortable.

2) Exploration: Exploring clients' needs, risks, sexual lives, social context and circumstances; providing information about dual protection, HIV/STI transmission and prevention and/or pregnancy prevention; assisting clients to perceive or determine their own risk for HIV/STI transmission and unintended pregnancy.

3) Decision-Making: Discussing dual protection, HIV/STI prevention and pregnancy prevention options; assisting clients to make decisions that are realistic to carry out, based on their social context; helping clients to anticipate the ramifications (positive or negative) of their decisions; discussing risk reduction options.

4) Skills-building for action: Developing skills in partner communication and negotiation, use of condoms and other family planning methods, and making concrete plans for carrying out decisions.

Providers were expected to maintain an informed choice approach to counseling, whereby contraceptive choice is not fully informed unless clients are aware of their risk for HIV/STI infection and are informed about the options for preventing pregnancy as well as reducing the

risk of HIV/STIs. Providers were advised to balance the need for emphasizing the importance of condom use, particularly in the case of individuals in high-risk situations, with pregnancy prevention needs. Providers were supposed to help clients explore the implications of choices based on their social and relationship context, recognizing that sometimes the most protective choices are not realistic or safe, but other types of incremental steps to harm reduction can be taken. For example, providers were taught to recognize situations in which encouraging women to use condoms or to confront partners could put the client at risk of relationship problems, or worse yet, gender-based violence or loss of economic support.

Definition of Outcomes

Effectiveness of the dual protection intervention was assessed in terms of six outcomes: knowledge, attitudes, and practices on the part of both family planning providers and clients. These outcomes were examined in terms of composite scores and selected individual key variables. Each of those outcomes is described below:

1. **Provider knowledge** was measured by conducting interviews with providers at the selected clinics. Interviews covered themes in EngenderHealth's Dual Protection training curriculum. These include the concept of dual protection and the different ways of achieving it; effectiveness of condoms in preventing STI transmission and pregnancy; questions providers can ask to help a client self-assess HIV/ STI risk; advice providers can offer female clients to help them talk to partners about risk reduction; and basic knowledge about HIV infection.

2. **Provider attitude** was assessed in terms of the provider's expressed perspectives on attitudinal issues addressed in EngenderHealth's Dual Protection training curriculum. These include perceived responsibilities related to HIV/STI prevention services; comfort in discussing sexuality and condom use with clients; adherence to stereotypical views on gender roles; and attitudes related to HIV and AIDS. To assess attitudes, interviewers read a series of statements to which the provider responded on a scaled basis: 1) agree 2) neither agree nor disagree or 3) disagree.

3. **Provider practice** of dual protection counseling was assessed primarily by means of observation of client-provider interactions in the course of family planning visits. Guided by a checklist, the observer assessed whether the encounter included the following essential components of dual protection counseling, as taught in the EngenderHealth curriculum: risk assessment and clarification of client's risk perception; application of an enhanced fully informed choice model of contraceptive counseling; positive promotion of condoms and correct teaching of their use; identification of alternative risk reduction strategies; and building of client negotiation and partner communication skills. Provider practice was also assessed in terms of selected actions that were self-reported in provider interviews. These included discussion with clients about sexuality and risk reduction; and condom promotion, education, and distribution. Finally, some questions posed in client exit interviews also reflected provider practice. These concerned whether the provider upheld good standards for communication, educated on condom use, and engaged the client in a two-way dialogue to allow her to self-assess risk and select a risk-reduction strategy.

4. **Client knowledge** was assessed through interviews with clients as they exited family planning counseling. Questions covered knowledge of issues related to the concept of dual protection and alternative strategies for practicing it; modes of STI/HIV transmission and means of prevention; condom effectiveness for HIV/AIDS and pregnancy prevention; and knowledge about how to use condoms.

5. **Client attitude** was assessed in the course of exit interviews using a series of scale questions analogous to those used in measuring provider attitudes. The interviewer read a series of questions to which the client responded 1) yes 2) unsure or 3) no. Questions addressed the client's perspectives on issues related to comfort in discussing sexual and reproductive health matters with partners; views toward condom use; intentions to take risk-reducing measures; views concerning gender roles; sense of self-efficacy in HIV/STI prevention; and attitudes related to HIV and AIDS.

6. **Client practice** was measured through exit interviews in which questions were posed about use of condoms, dual methods, or some other means of dual protection such as abstinence. Questions were also posed on intermediate steps such as communicating with the partner about sexuality, STI/HIV risk, safer sex practices and condom use.

Composite Scores

Each of the six outcomes measures was expressed in terms of a score, reflecting the composite nature of the outcome variables. Scores for each of the six outcomes were computed for both the pre- and post-intervention rounds of data collection. Below are rules followed in assigning scores:

- All questionnaire items contributing to outcome variables were assigned scores between (-2) and 2, including 0. Higher scores were more favorable. An answer assigned a value of (-2) was twice as "unfavorable" as an answer that got (-1). To simplify analysis by eliminating negative numbers, scores were transformed to values between 0 and 4, with 4 being most favorable
- A given question could be assigned a value of 2 if the correct answer was given and (-1) if the correct answer was not given. This suggests that the reward for giving a correct answer is greater than the penalty for failing to give the right answer. This approach was generally used when responses were unprompted.
- Some items from client interviews and provider interviews contributed to the scores for provider practices. Generally, only values of (-1) to 1 (as opposed to (-2) and 2) were used, to allow recall from clients and providers to carry less weight than provider practices that were directly observed. On the other hand, if a provider admitted a highly unfavorable behavior, such as talking about condoms with *none* of his clients, then a score of (-2) was given, based on the assumption that a provider would not exaggerate his own unfavorable performance.

Key outcome variables

To complement the composite scores, the investigators selected a small set of key variables representing essential components of each of the six outcomes. These key variables were considered either core concepts stressed in the dual protection curriculum, or essential steps in effective dual protection counseling.

Study Samples

The team of field workers spent 2 days in each of the participating facilities. A nurse attempted to conduct interviews with all providers who deliver family planning services and who were available at the time of the field workers' visit. Additionally, the nurse attempted to observe at least 3 client-provider interactions per provider, chosen by convenience. A team of 4 field workers attempted to conduct exit interviews with all clients who came for family planning services during the two days of data collection. No attempt was made to link responses from exit interviews with the findings from client-provider interactions.

Statistical Analysis Methods

Multivariate modeling of composite scores

The effectiveness of the dual protection intervention was assessed by determining whether improvements in scores over time (pre- intervention to post-intervention) were significantly greater in intervention sites than in comparison sites. For each of the six outcomes of interest, the null hypothesis and the alternative hypothesis were the same:

H_0 : The change in score over time in the intervention sites was equal to the change in score over time in the comparison sites.

H_A : The change in scores over time in the intervention sites was greater than the change in score over time in the comparison sites.

Multivariate analysis was completed to test each hypothesis. Given the *a priori* hypothesis about the superiority of the intervention, 1-tailed tests were used; 90% confidence limits for the changes were computed. Generalized Estimating Equations (GEE) approach (SAS Proc Genmod with identity link function) was used to account for providers being clustered within clinics in the provider data, or for clients being clustered within providers in the client data.

The following explanatory variables were used in modeling each of the six outcomes of interest:

1) Time indicator that had value of 1 for score reported post-intervention and 0 at pre-intervention;

2) Intervention group indicator that had the value of 1 for the intervention clinics and 0 for the comparison clinics

3) Interaction of time with intervention group. This was a product of time and intervention indicators described above.

For each outcome, the following linear model was fitted:

$$\text{Outcome} = \beta_0 + \beta_1 * \text{Time} + \beta_2 * \text{Group} + \beta_3 \text{Time} * \text{Group}.$$

The coefficients associated with explanatory variables in the model were estimates of the following:

- a) The intercept (β_0) was an estimate of the mean pre-intervention score in comparison clinics
- b) The coefficient for time (β_1) was an estimate of the added effect to the mean score at follow-up in comparison clinics
- c) The coefficient for group (β_2) was an estimate of the added effect to the mean pre-intervention score in intervention clinics
- d) The coefficient of interaction of group and time (β_3) was a measure of the difference (intervention versus comparison) in differences (post-intervention minus pre-intervention) in scores. This was a measure of the intervention effect. If the coefficient associated with group by time interaction was significant (e.g. one-sided p-value is less than 0.05) then the data were said to be consistent with the alternative hypothesis that the change over time in the outcome of interest was greater in the intervention group than in the comparison group. A one-sided p-value greater than 0.05 indicated that the data were consistent with the null hypothesis of no difference in change in outcome over time between the comparison and the intervention group.

In addition, linear combinations of the above coefficients corresponded to the following mean scores:

- When the time coefficient was added to the intercept, the result was an estimate of the mean post-intervention score in the comparison clinics.
- When the group coefficient was added to the intercept, the result was an estimate of the mean pre-intervention score in the intervention clinics.
- When the coefficients associated with time, group, and group by time interaction were added to the intercept, the result was an estimate of the mean post-intervention score in the intervention clinics.
- As noted earlier, the intercept was a measure of the mean pre-intervention score in comparison clinics.

Analysis of Key Variables

We used logistic regression analysis, applying generalized estimating equations (GEE), to test and estimate the effects of the intervention for each individual binary variable selected as key variable. In cases where the marginal logistic model failed to converge due to empty cells, test in difference in proportions instead of difference in logarithm of odds was performed. To evaluate statistical significance, p-values were adjusted to account for multiple endpoints using the Bonferroni method.

RESULTS

Provider profile

The profiles of the providers interviewed in the intervention and comparison sites are presented in Table 1. At the pre-intervention round of data collection, a higher proportion of providers in the intervention sites were male. The distribution of respondents across professional designations was roughly equivalent between the two groups, with most respondents being nurses. A substantially greater proportion of providers in intervention sites had received family planning training; meanwhile, a greater proportion of providers in comparison sites had been trained in HIV and AIDS. The profiles of the providers interviewed in the post-intervention round of data collection were generally similar to the first samples, with the exception of fewer providers in control sites reporting HIV and AIDS training, and providers in intervention sites reporting substantially more professional experience, as indicated by the time since completing pre-service training.

Table 1. Distribution of providers according to selected characteristics, by intervention groups and data collection round

	Comparison (6 sites)		Intervention (18 sites)	
	Pre- (n=9)	Post- (n=8)	Pre- (n=28)	Post- (n=26)
Mean age	32	30	32	35
Sex				
Male	2	2	11	8
Female	7	6	17	18
Professional grade				
Health officer	-	-	-	1
Nurse: professional, specialized, staff	7	7	20	19
Junior nurse	1	1	4	4
Health assistant	1	0	4	2
Median number of years since receiving pre-service certification/diploma	5	3	4	12
Received training on family planning				
Yes	5	6	21	21
No	4	2	7	5
Median number of years since receiving training on family planning	0	1	1	1
Received training on HIV or STI				
Yes	5	1	6	5
No	4	7	22	21
Median number of years since receiving training on HIV or STI	0	1	1	1

Client profile

Table 2 (page 14) presents the profiles of family planning clients who participated in interviews. Across both rounds of data collection and in both intervention and comparison sites, the clients samples were quite similar. On average, clients were married women in their mid-twenties with no more than 6 years of schooling. In all but the post-intervention comparison sample, the majority had already had at least three live births. Nearly all respondents reported only one current sexual partner, and most believed that their partners were similarly monogamous. Most clients interviewed were at the clinic for re-supply of injectables. New clients were particularly under-represented in the intervention sites in the post-intervention round of data collection.

Provider knowledge

Focusing on the first study objective, Table 3 (page 15) presents pre- and post-intervention mean knowledge scores for providers in intervention and comparison sites. Out of a possible 126 points, the average change in score (pre-intervention versus post-intervention) was 10.2 points greater in the intervention sites compared to comparison sites ($p < 0.01$). Contributing to this difference, the average knowledge score improved in intervention sites by 5.5 points while declining in comparison sites.

Table 4 (page 15) presents the number of providers giving correct responses to questions reflecting key knowledge variables. Only one score change was statistically significant: following the intervention, a greater proportion of providers in the intervention sites provided a correct definition of the term “dual protection.” By contrast, few providers were able to name in the post-intervention period strategies for practicing dual protection other than condom use. Specifically, only half mentioned mutually monogamy with an uninfected partner, and fewer than a quarter suggested dual method use.

Given that the composite knowledge score improved significantly in intervention sites, but there were no significant improvements reflected in the selected key knowledge variables, the investigators examined results from other variables that contributed to the composite knowledge scores to identify what other aspects of knowledge improved. In intervention sites alone, there was an increase in providers who

- said they would ever recommend condoms on their own as a method of family planning;
- were familiar with specific questions to pose to help a client assess her risk of HIV;
- knew specific messages to deliver as advice for helping a client talk to her partner about risk-reduction.

Table 2. Profile of clients pre- and post-intervention, by study group

	Comparison		Intervention	
	Pre-	Post-	Pre-	Post-
Number of clients	70	72	218	216
Median age	27 years	25 years	26 years	26 years
	%	%	%	%
Highest grade Completed				
None	37	36	28	43
1-6	26	33	35	28
7-8	17	10	10	6
9-11	6	8	10	10
12 or higher	10	8	8	11
Missing	4	4	10	2
Marital status				
Married	98	96	92	97
not married, living with partner	1	3	5	1
not married, not living with partner	1	1	3	2
Number of sexual partners				
0	0	0	2	1
1	99	98	98	97
≥ 2	1	1	0	1
Ever given birth				
yes	89	92	96	95
No	10	8	4	5
If yes, number of live births				
1	17	32	22	20
2	20	18	21	22
≥ 3	53	42	53	54
Missing	10	8	4	5
Think partner may have other sexual partners				
Yes	6	10	8	5
No	88	82	86	90
don't know	6	8	6	5
Reasons for clinic visit				
FP first visit	13	22	27	9
Re-supply FP method	4	75	68	86
Get counseling for current method	1	1	4	3
Switch from one FP method to another	10	3	6	3
Stop method	0	0	0	0
Other	4	3	3	0
Method use following visit				
pill/oral contraceptive	16	21	22	19
Injectable	84	79	84	78
Condoms	1	0	2	2
female sterilization	1	0	0	0
loop/IUD	1	0	2	2
implant/Norplant	3	8	7	5

Table 3. Provider’s pre-intervention and post-intervention knowledge scores, by study group

	Comparison		Intervention	
	Pre (n=9)	Post (n=8)	Pre (n=28)	Post (n=27)
Mean Knowledge Score (Perfect score = 126)	105.1	99.9	103.5	108.8
Mean change in knowledge score from baseline	-5.0		5.5	
90% Confidence level for the change	(-10.5, 0.5)		(3.2, 7.2)	
Difference in change [†]	10.2			
90% Confidence level for the difference	(4.3, 16.0)			

[†]P-value <0.01 (from one sided testing where the alternative hypothesis is that change from baseline to endline in the intervention group is higher than change from baseline to endline in the Comparison group, using generalized estimating equations).

Table 4. Number of providers giving correct answers to questions on key knowledge variables pre- and post-intervention, by study group.

	Comparison		Intervention	
	Pre (n=9)	Post (n=8)	Pre (n=28)	Post (n=27)
Correct definition of dual protection [†]	5	2	10	16
Ways of practicing dual protection				
Abstinence	4	1	19	15
Non-penetrative sex [#]	0	0	1	0
Use of condoms with no other FP method [#]	9	6	25	22
Mutual monogamy with uninfected partner while using effective FP method	1	2	10	13
Condoms + another FP method [#]	0	2	1	6

[†]P-value <0.05

[#] Test in difference in proportions instead of difference in logarithm of odds was performed for this outcome.

Provider attitudes

Table 5 presents results associated with another aspect of the project’s first objective: measuring changes in provider attitudes. With a maximum possible score of 116, average scores improved only slightly between pre- and post-intervention, with the difference between intervention and control sites very small (0.6 points) and statistically not significant.

Table 6 highlights some key attitudinal variables that were important themes in the dual protection curriculum. At pre-intervention data collection, some attitudinal variables were already quite favorable in both intervention and control sites. Specifically, nearly all providers

- agreed that family planning providers should talk to all clients about STIs;
- agreed that assisting clients in choosing an STI prevention strategy is part of his/her job;
- reported feeling comfortable talking to clients about sexuality.

Those highly favorable baseline scores partially explain why intervention sites failed to achieve a statistically greater improvement at follow-up. Importantly, some negative or inappropriate attitudes still prevailed, as indicated by the finding that 21 of 27 providers in intervention sites agreed at follow-up with the statement: “Most people who become infected with HIV have low moral character.” Contradicting providers’ statement that they should talk to all clients about STIs, nearly half the providers in the intervention group agreed that most of their family planning clients *do not need* information about STI or HIV.

Table 5. Provider’s pre-intervention and post-intervention attitude scores, by study group

	Comparison		Intervention	
	Pre (n=9)	Post (n=8)	Pre (n=28)	Post (n=27)
Mean Attitude Score (Perfect score = 116)	95.2	98.1	89.8	93.9
Mean change in provider’s attitude score from baseline	3.3		3.9	
90% Confidence level for the change	(-2.6, 9.1)		(1.1, 6.7)	
Difference in change [†]	0.6			
90% Confidence level for the difference	(-5.9, 7.1)			

[†]P-value = 0.44 (from one sided testing where the alternative hypothesis is that change from baseline to endline in the intervention group is higher than change from baseline to endline in the Comparison group , using generalized estimating equations).

Table 6. Number of providers giving favorable answers to questions on key attitudinal variables pre- and post-intervention, by study group.¹

	Comparison		Intervention	
	Pre (n=9)	Post (n=8)	Pre (n=28)	Post (n=27)
Provider believes that family planning service providers should talk to all clients, even middle aged married mothers, about STIs	9	8	27	26
Provider believes that “assisting the client to choose a strategy to protect herself from STI” is part of his/her job when providing family planning services [#]	9	8	27	26
Agree that Providers in a family planning clinic offer services to help couples prevent pregnancy. Helping couples avoid STIs is beyond providers’ control [#]	0	0	3	4
Report feeling comfortable talking to clients about their sexual behaviors [#]	9	8	20	24
Agree that most of the family planning clients who come to this clinic do not need information about STI or HIV	5	4	16	12
Believe that most people who become infected with HIV have low moral character	7	4	27	21

¹None of the differences between groups were significant at p=0.008.

[#] Test in difference in proportions instead of difference in logarithm of odds was performed for this outcome.

Provider practices

Table 7 presents findings associated with the final aspect of the first objective: assessing changes in provider practices. Average practice score increased by 15.7 points in intervention sites, compared to only a 0.3 increase in comparison sites. This difference in change was marginally significant ($p=0.08$). At the same time, the post-intervention score in the intervention group was only 105 out of a maximum score of 222, indicating that providers failed to carry out many of the key steps in effective dual protection counseling.

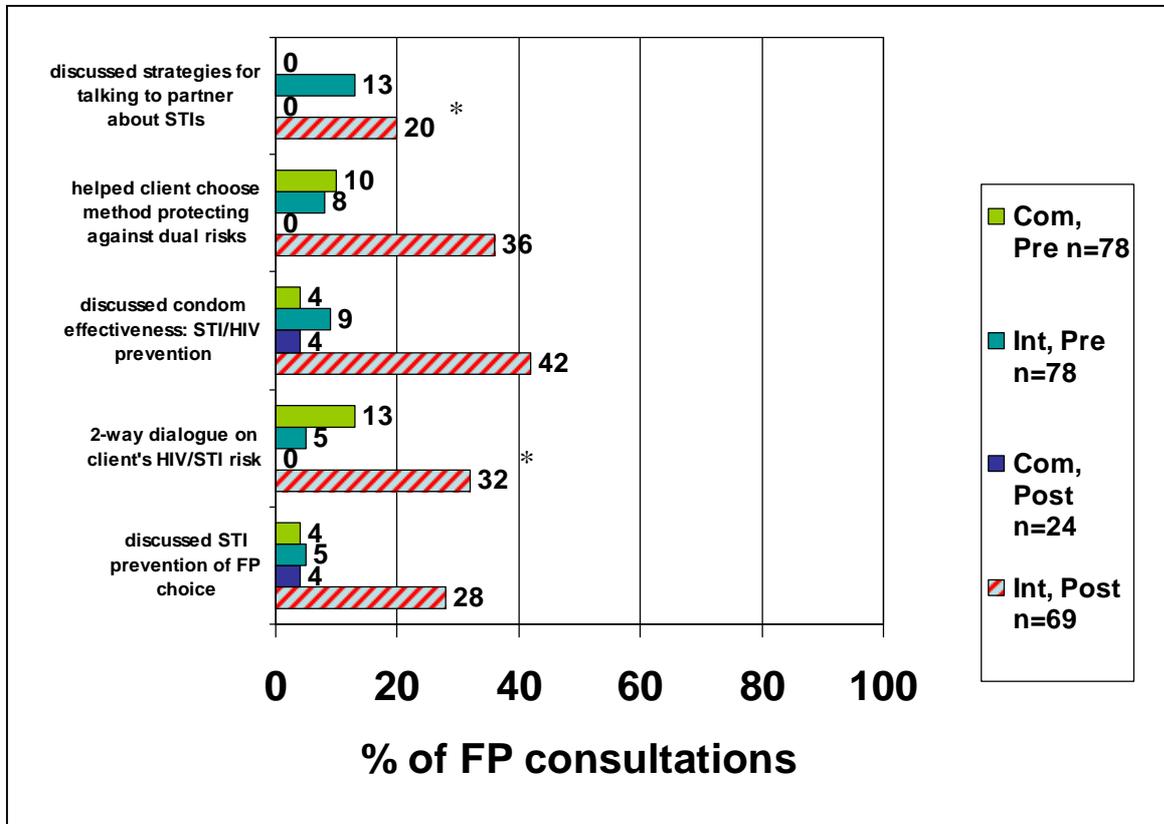
Table 7. Provider’s pre-intervention and post-intervention practice scores, by study group

	Comparison		Intervention	
	Pre (n=9)	Post (n=8)	Pre (n=28)	Post (n=27)
Mean practice score (Perfect score = 222)	91.6	91.9	89.3	105.0
Mean change in provider’s practice score from baseline	0.3		15.7	
90% Confidence level for the change	(-8.09, 8.6)		(3.27, 28.2)	
Difference in change [†]	15.4			
90% Confidence level for the difference	(0.5, 30.5)			

[†]P-value = 0.08 (from one-sided testing where the alternative hypothesis is that change from baseline to endline in the intervention group is higher than change from baseline to endline in the Comparison group, using generalized estimating equations).

The main approach to assessing provider performance was to observe client-provider interactions during family planning service delivery. Figure 1 presents the proportion of observed family planning visits in which the provider carried out each task selected as key steps in dual protection counseling. The figure shows substantial improvements in provider performance in the intervention sites; statistically significant improvements were found in the number of service delivery encounters in which the provider engaged the client in a 2-way dialogue about her risk of STI/HIV, and discussed strategies for talking to partners about concerns related to STI. While these findings are encouraging, the figure illustrates that despite these improvements, providers in the intervention sites were still failing to carry out those key dual protection counseling tasks in the majority of cases. One encouraging finding, not pre-selected as key provider performance variable but contributing to the composite score, is that providers in intervention sites discussed the effectiveness of condoms in preventing pregnancy in 42% of consultations post-intervention, compared to 9% pre-intervention. There was little improvement in the comparison sites.

Figure 1. Percent of observed family planning counseling sessions in which key task in dual protection counseling was performed, pre- and post-intervention, by study group



* Significant at 0.05, adjusted for multiple comparisons.

Client Knowledge

Table 8 presents findings associated with the study’s second objective: to assess changes in family planning knowledge following the introduction of the dual protection intervention. Out of a total possible knowledge score of 108, average score in intervention sites improved only 3.1 points, compared to a 2.1 point increase in comparison sites. This difference was not statistically significant.

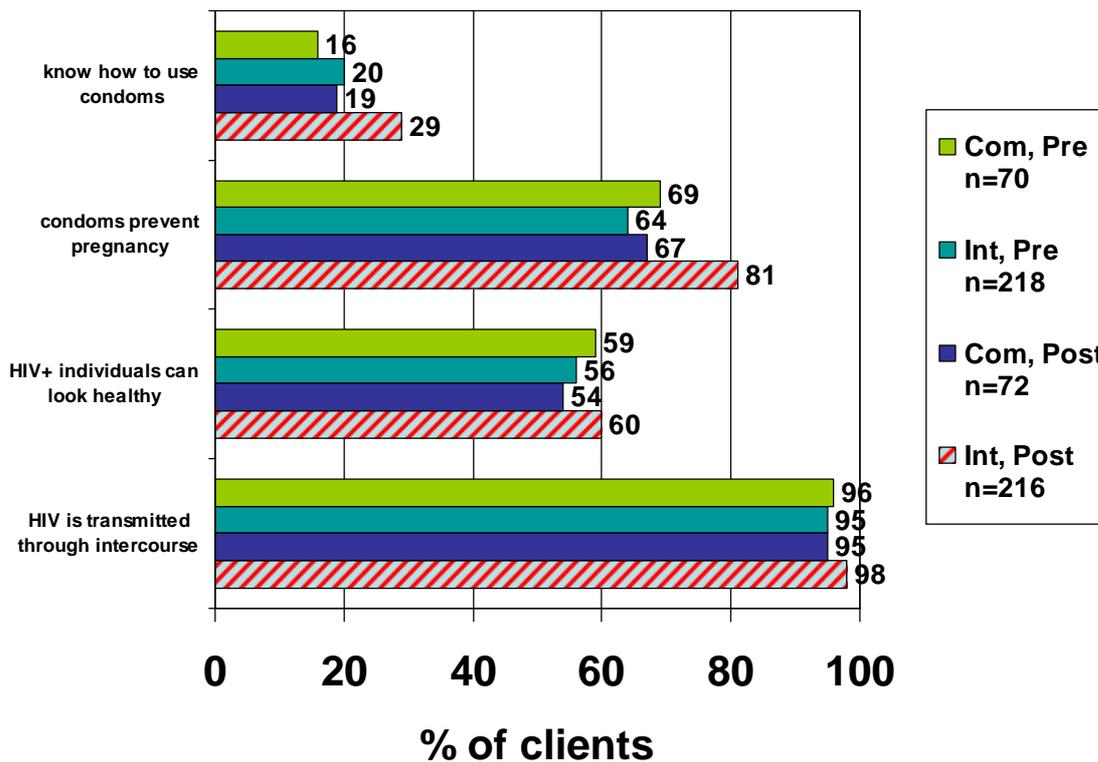
Figure 2 highlights some key client knowledge variables pre-selected as fundamental expected outcomes of the dual protection intervention. Both before and after the intervention, the vast majority of family planning clients in both study groups knew that an individual can become infected with HIV through sexual intercourse. Though not significant, there was a greater increase in the intervention group in the percent of clients who knew that condoms are an effective method for preventing pregnancy. It is disturbing to note that following the intervention, at least 40% of clients in both study groups did not know that an HIV-infected individual can look healthy, and most admitted that they would not know how to use condoms if they ever wanted to use them.

Table 8. Client’s pre-intervention and post-intervention knowledge scores, by study group

Outcomes	Comparison		Intervention	
	Pre- (n=70)	Post- (n=72)	Pre- (n=218)	Post- (n=216)
Mean Knowledge Score (Perfect score=108)	73.8	75.9	73.3	76.4
Mean change in client’s knowledge score from baseline	2.1		3.1	
90% Confidence level for the change	(-1.4, 5.7)		(1.6, 4.6)	
Difference in change [†]	1.0			
90% Confidence level for the difference	(-2.9, 4.9)			

[†]P-value = 0.34 (from one-sided testing where the alternative hypothesis is that change from baseline to endline in the intervention group is higher than change from baseline to endline in the comparison group, using generalized estimating equations).

Figure 2. Percent of clients giving correct answers to questions on key knowledge variables pre- and post-intervention, by study group.



Client Attitudes

Results further supporting the second objective are presented in Table 9, which presents changes in clients' attitudinal scores. Out of a possible score of 54, average scores of clients in the intervention group increased by 2.8 points, compared to 0.9 in the comparison group. This difference in change was statistically significant.

Table 9. Client's pre-intervention and post-intervention attitude scores, by study group

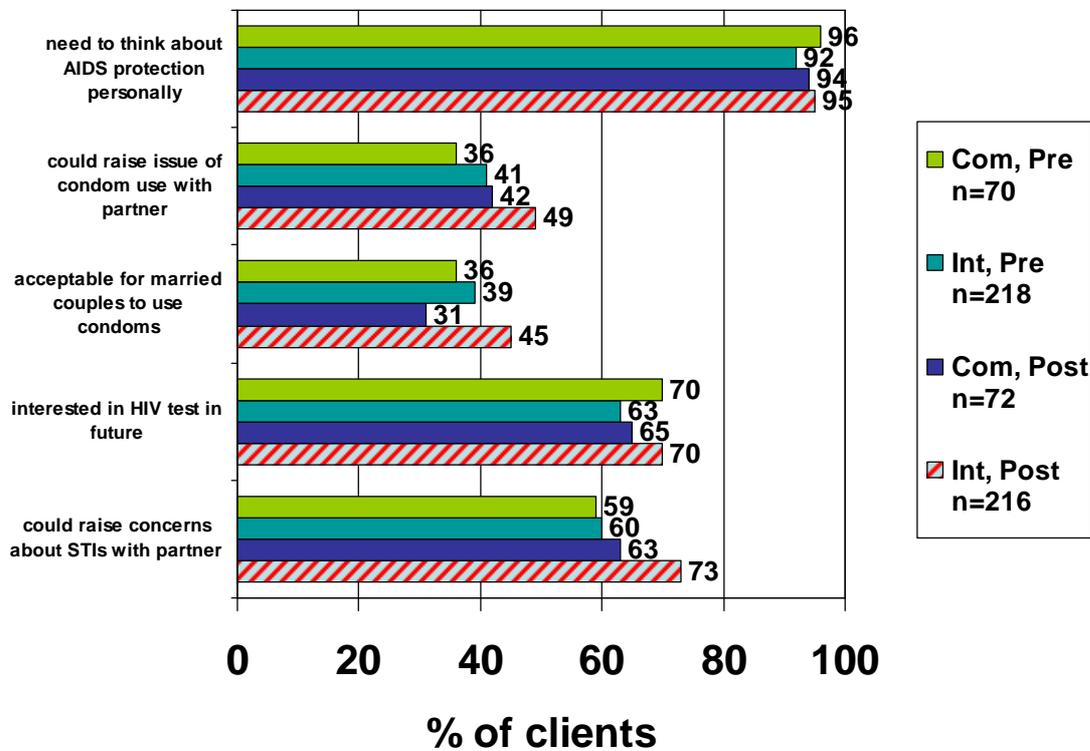
Outcomes	Comparison		Intervention	
	Pre- (n=70)	Post- (n=72)	Pre- (n=218)	Post- (n=216)
Mean Attitude Score (Perfect score=54)	37.7	38.6	37.7	40.5
Mean change in client's attitude score from baseline	0.9		2.8	
90% Confidence level for the change	(-0.1, 2.0)		(1.4, 4.3)	
Difference in change [†]	1.9			
90% Confidence level for the difference	(0.1, 3.7)			

[†]P-value = 0.04 (from one-sided testing where the alternative hypothesis is that change from baseline to endline in the intervention group is higher than change from baseline to endline in the Comparison group, using generalized estimating equations).

Figure 3 (page 21) isolates key attitudinal variables that contributed to the scores. Although no statistically significant differences were achieved, clients in intervention sites showed greater improvements than clients in the comparison group in matters such as feeling able to raise the issue of condom use or discuss concerns about STIs with one's partner. One encouraging finding is that the majority of family planning clients in both groups reported that they would be interested in HIV testing some time in the future. Among the minority of clients who said they would not be interested in testing, the main stated reason was that the client thought she was not at risk for HIV (data not shown). Noteworthy is the proportion of family planning clients who believe that it is acceptable for married couples to use condoms: although the improvement is greater in the intervention group, it is disappointing that the majority of all clients at follow-up do not agree that such a practice is acceptable. Further supporting this finding, over half the clients in both groups admit that they could not raise the issue of condom use with their partners.

Considering other variables that contributed to the attitudinal score (data not shown), in post-intervention interviews one quarter of the family planning clients in the intervention sites said they would want to use condoms with their partners if they had the choice, versus 15% in the comparison group. In both groups, only 15% of clients admitted that the thought of discussing HIV and AIDS makes them feel uncomfortable. Finally, both before and after the intervention, the vast majority of clients in both groups said they would not be bothered if the family planning provider talked to them about HIV and AIDS.

Figure 3. Percent of clients giving favorable answers to questions on key attitudinal variables pre- and post-intervention, by study group.



Client Behavior

Results supporting the final objective of this study, assessing changes in family planning clients' behavior, are presented in Table 10. Out of a total possible score of 50, average score in the intervention group increased by 0.6, while declining by 0.8 in the comparison group. This difference in change is statistically significant ($p=0.04$); however, given that the final average score in the intervention group is still so low (21.8), the improvement in behaviors cannot be considered *programmatically* significant.

Table 10. Client's pre-intervention and post-intervention behavior scores, by study group

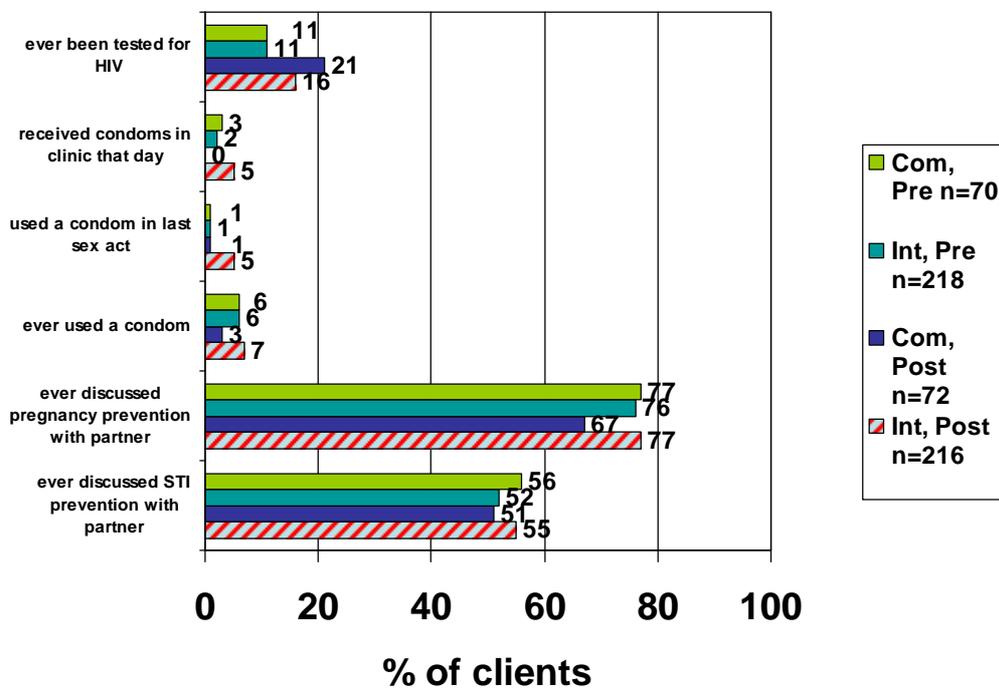
Outcomes	Comparison		Intervention	
	Pre- (n=70)	Post- (n=72)	Pre- (n=218)	Post- (n=197)*
Behavior Score (Perfect Score=50) Mean (sd)	21.4 (4.39)	20.7 (4.44)	21.2 (4.76)	21.8 (5.49)
Mean change in client's score from baseline	-0.8		0.6	
90% Confidence level for the change	(-1.6, 0.1)		(-0.4, 1.5)	
Difference in change [†]	1.4			
90% Confidence level for the difference	(0.05, 2.57)			

* 19 participants making first visit at follow-up data collection were excluded from the post-intervention sample.

[†]P-value = 0.04 (from one-sided testing where the alternative hypothesis is that change from baseline to endline in the intervention group is higher than change from baseline to endline in the Comparison group, using GEE).

Figure 4 presents results for key individual variables contributing to the behavioral score. None showed statistically significant improvements comparing the intervention group versus the comparison group. Noteworthy is the finding that in the post-intervention round of data collection, only 7% of clients in the intervention group and 3% of those in the comparison group reported *ever* having used a condom. Use of condoms in the sexual last act was similarly rare, and very few clients received condoms on the day of their family planning visit, even in the intervention sites. Both before and after the intervention, the majority of clients in both groups reported that they have discussed prevention of both STI and pregnancy with their partners.

Figure 4. Percent of clients reporting favorable behaviors pre- and post-intervention, by study group.



DISCUSSION

This study documented only a few modest benefits achieved by the dual protection intervention. Given that the intervention was primarily focused on providers—through training, supervision, and a job aid—it was expected that the intervention effect would be most evident at the provider level. One of the few encouraging findings from this study concerns family planning providers’ practice. Prior to the intervention, few family planning counseling sessions included mention of issues related to STI prevention; discussion of such issues increased substantially in sites exposed to the intervention. These findings suggest that family planning providers can be expected to assume responsibility for dual protection counseling if they are trained and given technical support through such means as a job aid and supervision.

Despite this documented progress, at the end of the study providers performed essential dual protection counseling tasks in only the minority of cases. It is disappointing to note, for example, that even in the presence of study observers, family planning providers discussed the STI prevention properties of family planning method choices in fewer than a third of consultations. An important issue not examined through this study is how a provider decides which family planning clients should receive dual protection counseling. It is possible that persistent stereotypes about the types of family planning clients who need counseling on STI and HIV prevention could impede providers’ adoption of improved counseling practices.

The study findings suggest that the changes in providers’ practices were supported by some modest improvements in providers’ knowledge. Following the intervention, more providers were familiar with the meaning of the term “dual protection.” Disappointingly, few providers were able to spontaneously name approaches, other than condom use, that a woman can take to practice dual protection. This is a noteworthy finding; if providers take a narrow view of dual protection and indeed are not familiar with the range of risk-reduction behaviors, they will not have alternative behaviors to suggest to women who do not consider condom use an option. Interviews with providers did not explore their attitudes toward the various options for dual protection taught during the training. It is possible, however, that they dismissed certain options, like non-penetrative sex, as irrelevant to the Ethiopian context.

Reflecting more favorably on providers’ dual protection training, the study documented improvements in knowledge components that had not been pre-selected as key outcome variables but contributed to the composite knowledge score. For example, in the post-intervention period, more providers regarded condoms as an effective contraceptive, and were familiar with questions to pose in helping a client to assess her STI/HIV risk, and specific messages to give a client in counseling her on speaking to her partner about risk reduction.

The study failed to document a significant improvement in provider attitudes believed to encourage high performance of dual protection counseling. A partial explanation for this study outcome is that some attitudes measured through this study were already favorable prior to the intervention. For example, most interviewed providers reported that STI risk reduction counseling was already part of their job. Yet pre-intervention observation of service delivery

documented that providers rarely performed such tasks. The contrast suggests that exploration of providers' attitudes may have evoked idealized concepts of job descriptions as opposed to depictions of responsibilities that providers currently embrace. Nonetheless, even if providers overstated their engagement in STI-reduction counseling, such responses are important because they suggest that some providers regard dual protection counseling as a reasonable responsibility to assume.

Considering another dimension of provider attitudes, this study had limited capacity to examine underlying biases about sensitive issues such as sexuality and gender norms that could impede providers' effective provision of dual protection counseling. Providers were interviewed through a quantitative survey; admittedly the fixed-response question format could have made providers prone to give socially desirable responses. However, one question chosen as a key attitudinal variable suggests that negative bias is still strong: the majority of providers agreed that most people who become infected with HIV are of low moral character. This example suggests that more attention should be directed toward combating preconceptions and personal biases that could limit providers' capacity to deliver effective dual protection counseling. Short training courses provide limited opportunity to change attitudes that have been developed over a lifetime; multi-faceted interventions that influence the culture of the health service delivery system more broadly are likely necessary to achieve a meaningful shift in attitudes.

This evaluation was also interested in the effect of the dual protection intervention achieved at the client level. On the basis of the composite score, the intervention produced no significant improvement in client knowledge. This finding suggests that changes in providers' counseling practices do not adequately translate into clients' retention of messages. As for one important exception, observation of service delivery documented an increase in the number of consultations in which clients were advised on the effectiveness of condoms in preventing pregnancy. In turn, there was an increase in clients in intervention sites who gave a correct response about the condom's contraceptive properties. This success is tempered by the finding that less than a third of clients reported post-intervention that they would know how to use a condom if they ever wanted to use that method.

Significant improvements were detected in family planning client attitudes, as reflected by composite scores. The results show modest evolution in perspectives regarding women's perceived ability to talk to one's partner about condoms or concerns about STIs. Despite these improvements, in post-intervention interviews less than half the women reported they could raise the issue of condom use with their partner or believed that condom use was acceptable within marriage. Not surprisingly, this study documented no increase in reported use of condoms in the intervention group, nor in the number of women receiving condoms from the family planning provider. These findings highlight the difficulty faced in encouraging women in stable union to initiate condom use, particularly if they are already using another family planning method. Persistent efforts and creative solutions are needed to overcome challenges like women's lack of control over sexual decision making, and prevailing stigma surrounding condom use by couples with emotional attachment. It was wise that the dual protection intervention encouraged providers to counsel clients on intermediate steps they can take to reduce risk, such as discussing concerns about STIs with their partners. A surprising finding was that over half the family planning clients in both types of sites reported in the pre-intervention round of data collection

that they had ever discussed with their partner the prevention of pregnancy and STIs. Given the existing potential for couples to communicate about matters related to sexuality, it is disappointing that the study failed to detect substantial increases in this intermediate risk-reduction behavior in the intervention sites.

In concluding this discussion, it is important to consider the factors that could have limited this study's capacity to detect an effect of the dual protection intervention. First, Ethiopia may be among the most challenging contexts to introduce a dual protection intervention in the context of family planning services. In this traditional society, contraceptive prevalence is low, use of condoms is sparse, and the power of women in sexual and reproductive decision making is limited. Although the country carries a huge burden in terms of total number of people infected with HIV, this is primarily a function of the vast population as opposed to staggering HIV prevalence. Compared to populations in Southern Africa, fewer Ethiopians have had first-hand exposure to people living with HIV, and the public discourse on HIV/STI prevention may be less pointed than seen elsewhere on the continent. Given these factors, providers may feel less urgency to deliver dual protection messages to their clients, and clients may be less receptive to such services.

An important methodological issue may have also limited the capacity of this study to detect the dual protection intervention's full effect. The evaluation was conducted in an "intent to treat" manner, meaning that the study team presumed that providers in sites randomly assigned to the intervention group were exposed to the intervention. In fact, no attempt was made to document that providers interviewed or observed post-intervention had indeed participated in the dual protection training. Similarly, no effort was made to determine whether interviewed clients were served by trained providers. This methodological approach was taken to simulate real-world conditions. Typically, not all providers in the target area of a new intervention are necessarily able to participate in training, and it is not uncommon for those providers who are trained to transfer out of facilities in which an intervention is supposed to be in place. Given the comprehensive nature of the dual protection intervention, which included a simple counseling job aid and supportive supervision, there was the expectation that the dual protection intervention could influence the practices of providers who did not participate in training. It is acknowledged, however, that the knowledge, attitudes, and practices of providers who directly participated in training may have been higher than those documented in this study.

Finally, choice of study sites could have also influenced the results. Both intervention and comparison facilities included in this study have benefited from EngenderHealth's technical assistance focused on quality improvement and the promotion of long-acting and permanent methods. As such, the providers in both sets of facilities may have been higher performing at baseline than is typically found in comparable resource-poor settings. Further, the providers in the intervention sites may have responded especially well to the dual protection training since they were building on a foundation of previous performance improvement training. On the other hand, trainers discovered that many providers had limited prior knowledge about HIV, and extra time was devoted during training to discussing basic issues like how the virus is transmitted. Another factor that could have limited the impact of the training was limited skills in English on the part of providers. Ethiopian trainers delivered most of the curriculum in Amharic, but

training-of-trainer materials were in English only, primarily due to resource constraints. Skillfully translated training-of-trainer materials may have resulted in better roll-out of training.

CONCLUSIONS

The following conclusions drawn from the study are offered to guide programmatic decision making concerning the dual protection intervention.

1. Family planning clients could benefit from *comprehensive* dual protection counseling

Many family planning clients lack knowledge about their risk of HIV/STI transmission and their options for reducing that risk. No reluctance was evident on the part of family planning clients to receive HIV/STI counseling in family planning services. Since condom use is a difficult option for many women in stable union, family planning clients require *comprehensive* dual protection counseling to expose them to the full range of risk-reduction alternatives, including intermediate steps on the pathway to actual risk reduction behavior. To support women in asserting the right to protect themselves, for example, providers should offer clients coaching on messages and communication strategies that they could use when talking with partners about the risk of STIs in the community. Providers should be mindful that more discussion about reproductive health matters may be occurring within couples, even in traditional societies, than is typically presumed. These observations suggest that future dual protection training interventions should balance instruction on condom promotion with knowledge transfer and skill-building for the promotion of other risk-reduction actions to expand providers' counseling capabilities.

2. Family planning providers could benefit from training and *ongoing* technical support to improve their delivery of dual protection counseling

Family planning providers lack knowledge and cling to biased opinions that leave them inadequately prepared to counsel clients about their comprehensive reproductive health needs. At the same time, provider performance can be expected to change in response to training and follow-on technical support. An issue requiring ongoing attention is supporting family providers in offering all necessary components of dual protection counseling to all clients in a consistently high quality manner. While short training courses are useful for imparting knowledge and building specific skills, more comprehensive and persistent interventions are needed to achieve lasting changes in providers' attitudes and behaviors. Similarly, clients require repeated counseling to help them progress through the process of behavioral change.

3. Incorporating dual protection counseling into family planning is one efficient way to implement STI/HIV prevention services

Globally, family planning services already reach millions of sexually active women each year. Introducing an integrated, dual protection approach to family planning counseling can help make services more responsive to women's broad sexual and reproductive health needs, thus improving the quality of care. Integrated services create an opportunity for clients to learn about

their dual risks of pregnancy and HIV/STI transmission and to make informed choices from among prevention options. Family planning providers appear to be willing to take on the responsibility, and clients appear to be receptive to the enhanced counseling.

4. The focus of dual protection promotion interventions must go beyond family planning counseling

This study revealed great need for improvement with respect to dual protection practices on the part of women. Yet gender-based power imbalances in sexual decision-making limit women's ability to adopt risk-reduction practices. Public health programs must continue to look for innovative strategies for capturing the attention of men and inspiring sustained preventive behaviors. Since men traditionally have limited exposure to sexual and reproductive health services, interventions must extend beyond the formal health sector and involve partners like employers and civil society.

5. Dual protection counseling should be incorporated into pre-service and in-service trainings organized for other purposes

The results from this evaluation were not sufficiently impressive to warrant a concentrated effort to scale-up the dual protection intervention on its own, with its own special funding. Rather, it would be worthwhile for reproductive health programs to seek opportunities to incorporate the dual protection instruction into training offered for other purposes, such as pre-service training of family planning providers. Further, the transfer of knowledge related to dual protection, the skill-building training, and the consciousness-raising through values clarification could be incorporated into other counseling training, such as that offered to HIV service providers.

References

- Askew I, Fassihian G, Maggwa N. Integrating STI and HIV/AIDS services at MCH/FP clinics. In Miller K, Miller R, Askew I et al. Eds. *Clinic-based FP and RH services in Africa: Findings from situation analysis studies*. New York: Population Council, 1998.
- Askew I, Maggwa NB. Integration of STI prevention and management with family planning and antenatal care in Sub-Saharan Africa – what more do we need to know? *International Family Planning Perspectives*, 2002; 28:77-86.
- Badiani R, de Mello e Souza C, Becker J. Sexual health STD/HIV prevention: an evaluation of integrating clinical and educational services in Brazil. Washington DC: ICRW, Women and AIDS Research Program, 1997.
- Badiani R, Becker J, de Mello e Souza C, Weiss E. Sexual Health and STD/HIV Prevention in BEMFAM's Salvador Clinic: A qualitative Evaluation of an Integrated Clinical and Educational Approach. Final Report. October 1997.
- Catania JA, Kegeles SM, Coates TJ. Towards an understanding of risk behavior: An AIDS risk reduction model (ARRM). *Health Education Quarterly*, 1990; 17:53-72.
- Central Statistical Authority of Ethiopia and ORC Macro. *Demographic and Health Survey 2000*. Addis Ababa and Calverton, MD, USA: 2001.
- Chikamata D, Chinganya O, Jones H, RamaRao S. Dual needs: Contraceptive and sexually transmitted infection protection in Lusaka, Zambia. *International Family Planning Perspectives*, 2002; 28:96-104.
- EngenderHealth. Assessment of Facilities Providing Family Planning Services in Ethiopia, 2002.
- AIDSCAP. AIDS Comparison and Prevention Project [AIDSCAP]. Behavioral Research Unit. Behavior change -- a summary of four major theories: Health Belief Model, AIDS Risk Reduction Model, Stages of Change, Theory of Reasoned Action, 1996.
- Miller K, Miller R, Askew I et al. Eds. *Clinic-based FP and RH services in Africa: Findings from situation analysis studies*, New York: Population Council, 1998:199-216.
- Ministry of Health, Ethiopia, Guidelines for Family Planning Services in Ethiopia. Addis Ababa: 1996.
- AIDS in Ethiopia: Background, projections, impacts, interventions, policy, Addis Ababa: Diseases Prevention and Comparison department, Ministry of Health, Ethiopia, Third Edition, 2000.

Twahir A, Maggwa BN, Askew I, Integration of STI and HIV/AIDS services with MCH-FP services: a case study of the Mkomani clinic society in Mombassa Kenya, Nairobi: Population Council, 1996.

United Nations, UNAIDS Epidemiological Fact Sheet 2004.
http://data.unaids.org/Publications/Fact-Sheets01/Ethiopia_EN.pdf

United Nations Programme on AIDS (UNAIDS), AIDS Epidemic Update--December 2001, Geneva, Switzerland: UNAIDS and WHO, 2001.

United Nations, Report on the global HIV/AIDS epidemic 2002 Geneva: UNAIDS July 2002

USAID Ethiopia. Integrated Strategic Plan 2001-2006. Addis Ababa: USAID.

WHO, Reproductive health needs assessment report – Ethiopia, Geneva:
UNDP/UNFPA/WHO/World Bank Special Programme of research, development and research training in human reproduction. WHO/HRP/ITT/1998.