Peer Education as a Strategy to Increase Contraceptive Prevalence and Reduce the Rate of STIs/HIV among Adolescents in Cameroon

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SUMMARY

The Institute for Behavioral Studies and Research (IRESCO) completed an operations research project entitled "Among Youth" targeting adolescents in the Mokolo neighborhood of Yaoundé, Cameroon. The intervention took place over a period of 19 months between July 2000 and February 2002. To measure the effects of the project, IRESCO completed baseline and endline surveys in May 2000 and March 2002. These surveys assessed the knowledge, attitudes, and behavior of youth aged 12 – 24 in the intervention site, and in the neighborhood of New Bell, located in Douala, which served as the control site. The 2000 survey was conducted among 2,504 adolescents (1,266 males and 1,238 females) and the 2002 survey included 2,464 adolescents (1,219 males and 1,245 females). The majority of the youth interviewed were high school students between 15 and 19 years old.

A total of 49 peer educators were trained in effective reproductive health communication and teaching techniques. These young men and women were then charged with the responsibility of educating their peers through informal educational talks, one-on-one sessions, conferences and round table discussions, and through cultural and athletic activities. Each educator organized at least one educational discussion per week in a popular public location: cultural centers, schools, or sports or cultural events. The messages were presented in formal and non-formal settings. Peer educators were under the direct supervision of two communication experts who oversaw all activities.

IRESCO also worked with youth in the target area to produce a magazine on adolescent reproductive health. They produced six editions of "Among Youth" magazine in English and French in 2001 and several comic books and brochures on reproductive health issues that affect adolescents' lives, including living with HIV and ways to prevent STI transmission. The number of youth familiar with the magazine "Among Youth" in 2000 was marginal. During the intervention one in ten people in the intervention area received copies of the magazine, and a total of 200,000 were distributed in 2001. After the intervention 44 percent of respondents surveyed in the intervention area had read at least one issue.

Adolescent Knowledge about HIV/AIDS

Knowledge about HIV/AIDS prevention methods improved during the intervention, but increases were observed in both the intervention and control groups. Fifty-three percent of those surveyed in the control site during 2000 knew condoms were a prevention method against the disease, compared to 70 percent in the intervention site. By 2002 seventy-five percent in the control site and 79 percent in the intervention zone were familiar with the method.

In both sites abstinence was cited second to condoms as the most effective method of prevention against HIV/AIDS. In 2000 it was cited by 19 percent of youth in both the control and intervention areas. In 2002 the proportion rose to 30 percent in the control site and 35 percent in the intervention site.

Of the three response options (i.e. abstinence, mutual fidelity and condoms), mutual fidelity was the prevention method least cited by adolescents. In 2000 eighteen percent of adolescents in the control site and 16 percent in the intervention site noted it as an option. In 2002 the proportions were 23 percent in the control site and 22 percent in the intervention site.

Very few youth were able to cite all three methods of prevention in 2000, but the data show improvements in both sites in 2002. The numbers rose from 5 to 11 percent in the control site, and from 4 to13 percent in the intervention site.

Adolescent Sexual Behavior

The data suggest that youth in the intervention area began to postpone the age when they first became sexually active. In 2000, twenty-nine percent of adolescents reported that they had their first sexual experience by age 15. But in 2002, the number decreased to 24 percent. In the control site the number remained constant during the two-year period at 22 percent.

At the same time, fidelity and abstinence increased in the intervention site, and fewer youth responded that they had multiple sexual partners. In 2000 thirty-seven percent of respondents in the intervention site and 35 percent in the control site had more than one sexual partner during the 12 months prior to the baseline survey. In 2002 the figures fell to 30 percent in the intervention site and 33 percent in the control.

Condom Usage

Condom use among adolescents is strongly inversely correlated with emotional confidence between partners; youth are more likely to use condoms when the emotional bond with their partner is weak. In the intervention site during the baseline survey 15 percent of respondents said they used condoms consistently with regular partners, 38 percent used them with occasional partners, and 46 percent used them with sex workers. After the intervention 27 percent used condoms with regular partners, 60 percent used them with occasional partners, and 74 percent used them with sex workers. All of these increases are statistically significant.

Proximity to Condoms

In 2000 fifty percent of adolescents in the control site and 54 percent in the intervention site knew at least one location where condoms are sold within a ten-minute walk from their home. In 2002 this increased to 62 and 64 percent respectively in the two sites.

CONTENTS

Acknowledgments

The information presented in this document is the result of a collaboration of a diverse group of people, to whom we offer our sincere gratitude.

We thank, first of all, all the young men and women who participated in the surveys conducted in 2000 and 2002. We hope that the results of this study will help their silent peers and encourage other organizations to perform reproductive health interventions of which youth will be the primary beneficiaries.

Our gratitude to the team leaders, interviewers, guides and chauffeurs who endured hardships on the ground to collect quality data. We also owe thanks to the typists who compiled the data and contributed to the success of the surveys.

We also thank the IRESCO support staff for their assistance with preliminary activities during the data collection phases.

On behalf of the entire research team,

Simon-Pierre TEGANG

I BACKGROUND

Between July 2000 and February 2002 the Institute of Behavioral Research and Studies (IRESCO), in collaboration with the Population Council Frontiers in Reproductive Health Program, conducted an operations research project entitled Peer Education as a Strategy to Increase Contraceptive Prevalence and Reduce the Rate of STIs/HIV among Adolescents in Cameroon. The intervention, which consisted of a series of media campaigns and peer education strategies, was called "Among Youth." This report compares the results of the baseline and endline surveys evaluating the effects of the intervention.

Cameroon is a Central African country stretching over 183,568 sq. miles. It has a population of approximately 16.2 million inhabitants and a population growth rate of 2.5 percent. Youth between the ages of 10 and 24 represent 32 percent of the total population (Population Reference Bureau, 2000 and 2002).

Most reproductive health services in Cameroon target women in mother and child health care centers. Only 19 percent of adolescents under 20 years old use these centers, and among family planning clients the proportion of those under 20 is 7.8 percent (Ministry of Public Health, 1998). Yet adolescent reproductive health issues affect the country's medical, social and economic realities. A survey conducted in Cameroon shows that at age 15, one in four adolescents (26 percent) are sexually active (Balepa and Barrère, 1992). More than half of all young women (54 percent) have at least one child by the time they are 20 years old (PRB 2000). Another study (Leké, 1989) shows that 28 percent of pregnancies recorded at the Yaoundé maternity hospital are among adolescent girls, representing 70 percent of all gynecological complication cases.

Modern contraceptive use among single females ages 15-19 is 20 percent (PRB 2000). HIV/AIDS prevalence in the overall population aged 15-49 in Cameroon is approximately 11.8 percent (PRB 2002). And about seven in 10 STI cases in the country occur in adolescents under the age of 25, suggesting that youth also make up a disproportionate number of new HIV cases.

This study examines the effects of the "Among Youth" IEC and peer education campaign on adolescent behavior and knowledge about reproductive health and family planning issues.

II METHODOLOGY

The IRESCO team used a quasi-experimental research design with one intervention site and one control site. The results observed in the experimental group were compared to those observed in the control site and can be represented as follows:

		Duration	
Experimental group	O1	x	O2
Control Group	O3	x	O4

Before the intervention the research team conducted a baseline survey in both the experimental group (O1) and the control group (O3). The goal of the baseline was to measure the level of knowledge and the extent of condom use as prevention against STIs/HIV and unwanted pregnancies. At the conclusion of the intervention, researchers conducted a posttest in both the experimental (O2) and control (O4) groups. The endline survey allowed researchers to evaluate changes in behavior among adolescents in the intervention group attributable to the intervention activities.

2.1 Objectives

The specific objectives of the intervention were to:

1) Train a group of adolescents of both sexes in communication skills for advocating behavioral changes among their peers with regard to STIs/HIV and family planning.

2) Inform and educate adolescents through educational talks and interpersonal discussions.

3) Inform and educate adolescents through IEC publications produced and distributed by their peers.

4) Improve adolescent knowledge about STIs and family planning, and reduce the risk of HIV/AIDS infection through the adoption of safe sexual behaviors.

2.2 Description of the intervention

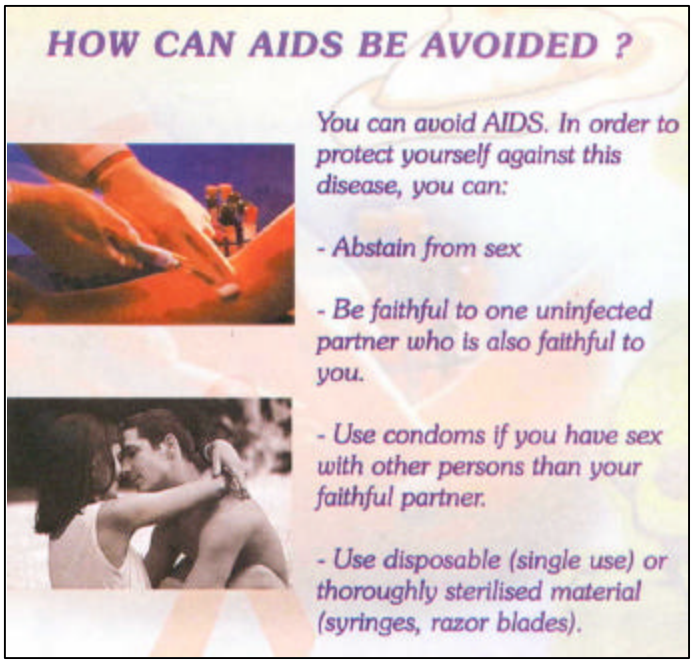
Through the operations research project "Among Youth," IRESCO sought to evaluate peer education as a means of increasing the contraceptive coverage rate and reducing STI/HIV prevalence among adolescents in Cameroon. The intervention was conducted in Mokolo, one of the most populated neighborhoods (with 100,000 inhabitants) in Yaoundé, the Cameroonian capital. Mokolo is considered a poor area, rife with crime, sexual promiscuity and prostitution. Despite its population density, there are few primary

or secondary schools in the neighborhood and few health or cultural facilities available to youth in the area.

The control site, New Bell, is a neighborhood in the city of Douala, the country's economic capital. Yaoundé and Douala are the two largest metropolitan areas in Cameroon. The neighborhoods chosen have very similar demographic and socio-economic characteristics. The neighborhoods are located in cities that are about 250 km apart so the risk of contamination between the sites was limited. However, it is important to note that a similar project ("100% Youth") was conducted by Population Services International during the intervention period in Yaoundé and Douala and may have influenced these results.

A total of 49 peer educators between the ages of 12 and 24 were trained in the Mokolo neighborhood in effective reproductive health communication and teaching techniques. These young men and women then educated their peers about a variety of reproductive health issues of particular concern to youth, including friendship and dating, sexuality, unwanted pregnancy, abortion, STIs/HIV, and prostitution through informal educational talks, one-on-one sessions, conferences and round table discussions. The peer educators were chosen based on the following criteria: 1) permanent residency in the intervention area; 2) willingness and motivation to contribute to the project (with a positive attitude about STIs/HIV prevention and family planning); 3) availability to carry out project activities; and 4) ability to communicate well with peers (fluent in French and/or local languages in the neighborhood). Each educator organized at least one educational discussion per week in a popular public location. Messages were presented in formal and non-formal settings in more than a dozen schools and youth associations during 2001. They organized community events including theatrical skits and distributed IEC materials at informational kiosks in school buildings. They sponsored special events including eight soccer matches between the "Among Youth" team and other youth teams. Educators were able to reach large audiences at these events, at least 600 youth per game, and provided positive messages on adopting healthy lifestyles. The peer educators also facilitated 12 educational film screenings in schools and video clubs followed by discussion sessions. Peer educators were under the direct supervision of two communication experts who oversaw all activities.

As a second component of the intervention, IRESCO produced and distributed a magazine edited by and for the target population called "Among Youth." The magazine covers a variety of reproductive health themes including HIV/AIDS in schools, living with HIV, mother-to-child transmission, and voluntary testing and counseling. In 2001 the team produced six editions of "Among Youth" in both English and French, and disseminated 35,000 copies of the magazine. They produced three comic books and distributed 15,000 copies of each, in addition to 10,000 copies each of four educational brochures addressing topics concerning adolescents including ways to avoid STIs and why youth, in particular, are at risk of contracting STIs.



2.3 Survey Methodology

The baseline study included a population of 2,504 randomly selected adolescents (1,266 boys and 1,238 girls) between the ages of 12 and 24. The post-intervention survey used the same selection criteria sampling independently 2,464 adolescents (1,219 boys and 1,245 girls). Participants were chosen using a two-stage probability design.

During the first stage of the survey, researchers chose households based on the following procedure:

- All of the households in the Mokolo and New Bell neighborhoods were cataloged and numbered.
- All households with at least one eligible adolescent male or female were separated. Households were labeled by number and identified by the number of eligible youth residing there.
- To eliminate the need for weighting data, the sample was chosen using probability proportional to size.
- In both 2000 and 2002, target sample size was 611 people per sex per site. A sampling interval p was calculated dividing the eligible population by 611.

- The first site was chosen in random fashion, arbitrarily selecting a number u between 1 and p. Systematic random sampling was used to select all subsequent households, based on the formula (u + Kp) k = 1,2,.....611.

As a second step, researchers randomly selected individual participants from within each household. Youth selected were between the ages of 12 and 24 and had to have spent the previous night in the house where they were interviewed. In households where more than one person of the same sex was eligible, participants were chosen according to their birthdays. Interviewers selected the youth whose birthday had occurred most recently during the current year.

2.4 Characteristics of the survey population

In general, youth surveyed in New Bell and Mokolo had few socio-demographic differences between the two phases. Table 2.1 shows that about one quarter of male participants in the control site were less than 15 years old. Just less than a third of males in the intervention site were under 15 in the 2002 survey. There was a slight rise (5 percent) in the number of youth between the ages of 15 and 19 surveyed in the control area in 2002. With the exception of the baseline control group, 15-19 year olds were the largest group of respondents in all of the surveys.

Table 2.1: Distribution of male survey participants by socio-demographic characteristics and phase

	2000		2002	
	Control %	Intervention %	Control %	Intervention %
	N=634	N=632	N=615	N=604
Age				
< 15 years	25.7	20.6	27.6	32.6
15 – 19 years	35.8	49.2	40.8	43.4
20 – 24 years	38.5	30.2	31.5	24.0
Marital Status				
Married	2.4	1.6	2.9	1.8
Single	97.6	98.4	97.1	98.2
Education Level				
Primary	23.8	25.6	29.9	29.1
Secondary (1^{st} cycle)	53.3	50.6	52.4	50.5
Secondary (2^{nd} cycle)	22.9	23.7	17.7	20.4
Religion				
Catholic	41.6	51.9	39.2	49.8
Protestant	25.9	28.3	20.5	30.0
Other	32.5	19.8	40.3	20.2
Socio-economic index				
Low	38.6	17.9	29.1	32.6
Lower Middle	25.6	18.5	24.9	21.2
Upper Middle	24.1	29.7	25.0	27.3
High	11.7	33.9	21.0	18.9

There is no notable variation in either the phase or the site with regard to male marital status. Likewise, educational level did not vary significantly by either site or phase. Boys who were in the first cycle of secondary school were invariably the largest group represented, constituting about half of both samples.

Analysis of the distribution by socio-economic index shows differences between the two groups in 2000. In the control site, boys with the lowest economic level were most represented (39 percent), and those in the highest economic standing were least represented (12 percent). In the intervention site the inverse situation was apparent; those with a low economic level were least represented (18 percent), and those with a high

economic status represented 34 percent of the surveyed population. In 2002, these differences diminished with proportions of the two groups at each socio-economic level within a few percentage points of one another.

Similar to the boys, girls between the ages of 15 and 19 were the largest group represented in both the baseline and endline surveys (see Table 2.2). Marriage rates were much higher for girls than for boys. Independent of the site, between 10 and 14 percent of girls were married, compared to less than 3 percent of boys.

Table 2.2 shows that, as with the males, females in the first cycle of secondary education represented over 50 percent of the samples in both sites and phases. At baseline, the intervention group had notably more respondents in the second cycle of secondary school and fewer in primary, but the proportions at the endline were quite similar between groups, and both sexes.

In both sites and phases, girls with a low socio-economic level accounted for about one-third of respondents. Girls in the highest socio-economic index group were consistently the smallest group. In both phases, the intervention group had more girls in the highest group (19 compared to 11 percent in the control group, and 22 versus 13 in 2002) but otherwise proportions were generally similar.

Table 2.2: Distribution of female survey participants by socio-demographic characteristics and phase

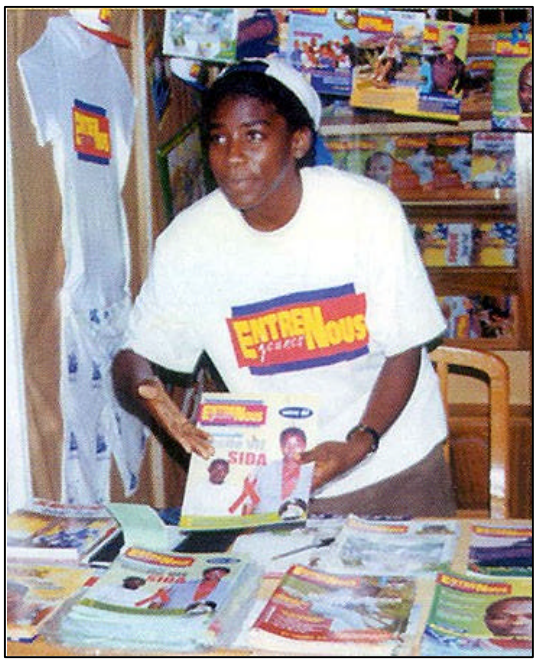
	2000		2002	
	Control %	Intervention %	Control %	Intervention %
	N=622	N=616	N=611	N=634
Age				
< 15 years	26.5	17.4	23.2	28.5
15 – 19	42.0	52.1	44.0	47.8
20 – 24	31.5	30.5	32.7	23.7
Marital Status				
Married	13.0	13.6	12.9	9.5
Single	87.0	86.4	87.1	90.5
Educational Level				
Primary school	32.3	24.7	29.5	26.2
Secondary (1st cycle)	52.7	50.5	51.1	55.0
Secondary (2nd cycle)	15.0	24.8	19.5	18.8
Religion				
Catholic	45.7	59.3	50.4	60.9
Protestant	30.2	21.9	30.0	24.1
Other	24.1	18.8	19.6	15.0
Socio-economic index				
Low	34.9	30.8	41.9	33.4
Lower Middle	26.0	20.9	19.6	20.3
Upper Middle	27.8	29.1	25.5	24.0
High	11.3	19.2	12.9	22.2

III RESULTS

Over 5,000 adolescents were reached through IRESCO's "Among Youth" peer education campaign. The results of their efforts to influence adolescent reproductive health behavior and knowledge were measured by exposure to IEC materials, knowledge about HIV/AIDS and STIs, reported sexual behaviors, condom usage, and STI infection rates and are reported below.

3.1 Exposure to IEC Materials

Exposure to IRESCO's magazine "Among Youth" was marginal in 2000, but evolved remarkably in both sites during the course of the intervention. In total an estimated 200,000 adolescents received reproductive health information directly through IRESCO's "Among Youth" program. The increase in the number of youth exposed to IEC materials was more significant in the intervention site than in the control. Before the intervention, less than one percent of youth in either site reported reading the magazine in the week preceding the survey. In 2002, the number of youth who read a copy the week prior to the survey rose to 6 percent in the control site and 10 percent in the intervention site.



The intervention also improved considerably the number of youth who were ever exposed to the magazine. In 2000 only 10 percent of respondents in either site had seen the magazine at least once. After the peer education effort, 22 percent of respondents in the control site and 44 percent in the intervention site had read the magazine at least once.

Table 3.1: Exposure to the "Among Youth" magazine

	2000		2002	
	Control %	Intervention %	Control %	Intervention %
	N=1,256	N=1,248	N=1,226	N=1,238
Read in the previous week	0.4	0.9	5.9***	9.6***
Read at least one issue	10.2	10.9	21.5***	44.0***

***P = 0.000

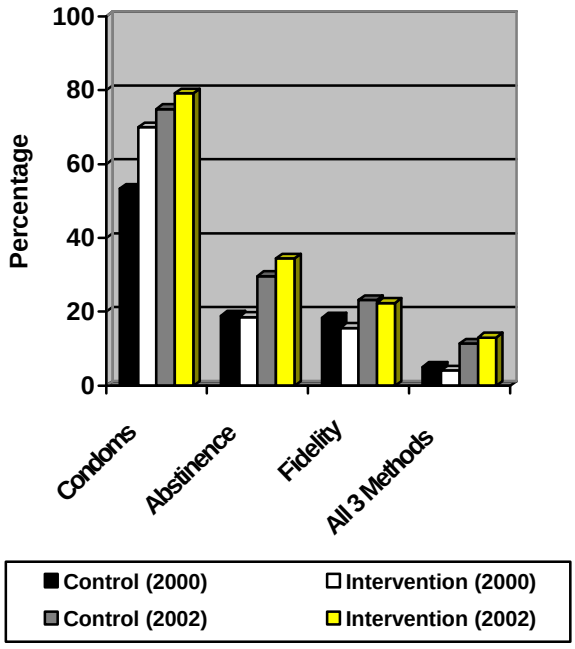
It is important to note that low reported exposure in the week prior to the survey may be attributed in part to the fact that "Among Youth" is produced six times a year. As a

result, the data could be influenced depending upon whether they were collected just after a publication was released or later in the publishing cycle.

3.2 Knowledge about HIV/AIDS

HIV/AIDS education is the first step in preventing infection. It is essential that youth, who are just beginning their sexual lives, have access to information about the disease and how to protect themselves. HIV/AIDS knowledge was measured through a variety of questions during the surveys.

Graph 3.1 Adolescent knowledge about HIV/AIDS prevention methods



The level of knowledge about the three primary methods for preventing HIV/AIDS increased significantly among youth in both sites during the intervention. Adolescents cited condoms as a prevention method in 53 percent of cases in the control site and 70 percent in the intervention site in 2000. In 2002 the percentages increased to 75 and 79 percent respectively. The absolute change was greater in the control site, but both changes are statistically significant.

After condoms, abstinence was the second most frequently cited prevention method in both phases, and showed the greatest relative change in the intervention group. In 2000, nineteen percent of respondents in both sites mentioned the method. In 2002 the numbers increased to 30 percent in the control group and nearly doubled to 35 percent in the intervention area—both statistically significant increases.

Mutual fidelity is the HIV/AIDS prevention method least cited by adolescents in the study areas and the only one where the control group showed greater knowledge than the intervention group in both the baseline and endline surveys. Nevertheless, both groups showed a significant improvement over the course of the intervention in the proportion of adolescents who spontaneously mentioned mutual fidelity as a means of preventing infection.

Knowledge of all three methods of HIV/AIDS prevention was very weak in the 2000 survey. Despite significant increases in both sites by 2002, the proportion that could identify all three prevention methods discussed above remained unacceptably low, given

the high HIV incidence in Cameroon: eleven percent in the control site and 13 percent in the intervention site.

Regardless of site or phase of the study, almost all adolescents responded that they had heard talk of HIV/AIDS, with 2002 totals all virtually 100 percent. As evident in Table 3.2, most adolescents knew that a person who appears to be in good health could, in fact, be carrying the disease. However, while the overall level of the intervention group remained slightly higher than the control group on this indicator, the control group showed a much greater—and significant—change. A similar phenomenon of the control group "catching up" to the intervention group can be seen in the subsequent indicator, knowing that there are ways to prevent contracting HIV. Here, though, all changes were significant.

Table 3.2 also presents adolescents' knowledge of mother to child transmission. In both the baseline and endline surveys about 55 percent of adolescents were aware of this mode of transmission in both the control and intervention sites. Interestingly, the control group saw a significant decrease among boys' knowledge and an increase in girls' knowledge, which combine to make a negligible change in the overall ratio. Both girls and boys in the intervention group also had marginally lower scores in the post-intervention survey.

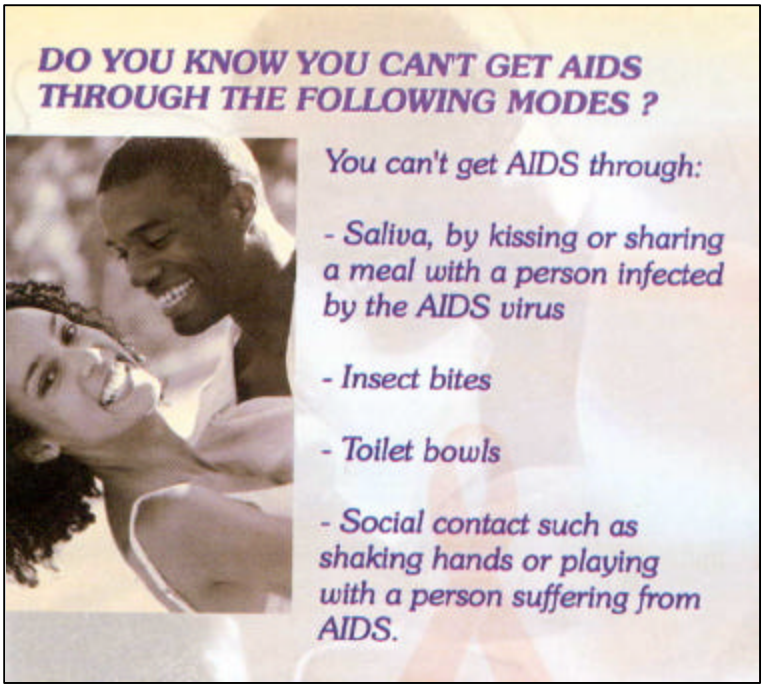
Table 3.2 Adolescent knowledge about HIV/AIDS

	2000		2002	
	Control %	Intervention %	Control %	Intervention %
Has heard talk about HIV/AIDS				
Boys	96.4 (634)	97.9 (632)	99.8*** (615)	99.2* (604)
Girls	98.9 (622)	99.4 (616)	99.3 (611)	99.7 (634)
Total	97.6 (1,256)	98.6 (1,248)	99.6*** (1,226)	99.4** (1,238)
Knows that a person who looks healthy can be carrying the disease				
Boys	66.1 (634)	77.5 (632)	81.0*** (615)	78.5 (604)
Girls	65.0 (622)	76.5 (616)	72.3*** (611)	80.6* (634)
Total	65.5 (1,256)	77.0 (1,248)	76.7*** (1,226)	79.6 (1,238)
Knows there are ways to prevent contracting the virus				
Boys	73.3 (634)	85.1 (632)	91.9*** (615)	91.7*** (604)
Girls	72.0 (622)	82.3 (616)	90.0*** (611)	91.5*** (634)
Total	72.7 (1,256)	83.7 (1,248)	90.9*** (1,226)	91.6*** (1,238)
Knows that a mother can transmit the virus to her child during birth				
Boys	61.4 (634)	57.9 (632)	55.9* (615)	55.5 (604)
Girls	47.4 (622)	52.4 (616)	54.3** (611)	51.4 (634)
Total	54.5 (1,256)	55.2 (1,248)	55.1 (1,226)	53.4 (1,238)

* P = 0.050 ** P = 0.010 *** P = 0.000

Absolute values in parentheses.

3.3 Adolescents' Sexual Behaviors



Sexual Experience

Sexual activity begins relatively early among Cameroonian youth. In 2000, as Table 3.3 indicates, 22 percent of adolescents in the control site and 29 percent in the intervention site had had their first sexual experience by the time they were 15 years old. In 2002 the number in the control site remained the same, but fell significantly in the intervention site to 24 percent. These findings are consistent with the 1991 DHS estimate that 26 percent of Cameroonian youth have sex by age 15.

Table 3.3 Percentage of youth by age at first sexual encounter

	2000		2002	
	Control %	Intervention %	Control %	Intervention %
Before age 15				
Boys	21.5 (634)	33.5 (632)	27.5** (615)	27.3** (604)
Girls	21.5 (622)	24.4 (616)	17.2* (611)	19.9* (634)
Total	21.5 (1,256)	29.0 (1,248)	22.3 (1,226)	23.5*** (1,238)
Before age 18				
Boys	74.6 (342)	81.7 (311)	74.1 (290)	71.9*** (221)
Girls	81.9 (310)	79.8 (326)	78.1 (310)	75.9 (249)
Total	78.1 (652)	80.7 (637)	76.2 (600)	74.0** (470)

* P = 0.050 ** P = 0.010 *** P = 0.000
Absolute values in parentheses.

In both phases of the study boys in the intervention site were more likely to have their first sexual encounter by age 15 than girls. In 2000, thirty-four percent of boys interviewed had their sexual début before age 15, compared to 24 percent of girls. In 2002, twenty-seven percent of boys were sexually active before age 15, compared to 20 percent of girls. Similar trends were found in the control site in 2002 (28 versus 17 percent).

In both sites and phases, at least three out of four adolescents were sexually active by the age of 18. A notable variation exists in the intervention site: the total number of youth sexually active by age 18 (81 percent in 2000 and 74 percent in 2002) fell significantly,

primarily due to an even larger reduction in the proportion of boys who had their sexual début before age 18 (82 percent in 2000 versus 72 percent in 2002).

The overall median age at first sex (among sexually active adolescents) was 16 years. Boys, however, became sexually active slightly earlier than girls, with a median age of 15 (with the exception of the 2000 sample from the control site, where the median was 16 years.) In the both sites the median age remained unchanged for girls at 16 years.

In 2000, as Table 3.4 shows, half of adolescents in the intervention site compared to 41 percent in the control site had sexual relations in the 12 months prior to the survey. In 2002 the number rose significantly in the control site to 44 percent, but dropped significantly in the intervention site to 38 percent. Analysis by gender shows an even greater decline for girls in the intervention site: the proportion who had sex in the previous year dropped by a third, from 59 to 39 percent. At the same time, the survey showed a significantly higher sexual activity in the control area than at baseline: 48 percent compared to the original 42 percent. A similar pattern was observed among boys—a decrease in recent sexual activity in the intervention group and an increase in the control group—but the differences were smaller and not statistically significant.

Table 3.4 Percentage of adolescents who had sex during the past 12 months

	2000		2002	
	Control %	Intervention %	Control %	Intervention %
Boys	39.4 (634)	40.7 (632)	40.8 (615)	36.9 (604)
Girls	41.6 (622)	59.1 (616)	48.0** (611)	39.0*** (634)
Total	40.5 (1,256)	49.8 (1,248)	44.4* (1,226)	38.0*** (1,238)

* P = 0.050 ** P = 0.010 *** P = 0.000

Absolute values in parentheses.

Sexual Partners

In general, more boys than girls had multiple sexual partners. The values for boys with two or more sexual partners in the preceding 12 months ranged from 38 to 50 percent, whereas with girls it ranged from 20 to 33 percent. Interestingly, in both groups and phases, more sexually experienced boys remained abstinent for 12 months than girls.

In 2000, fifty percent of sexually active boys compared to 20 percent of sexually active girls in the control site had more than one sexual partner during the 12 months prior to the survey. Trends were similar but less dramatic in the intervention area in 2000 (41 percent of boys and 33 percent of girls had multiple sexual partners) and in both sites in 2002. Thirty-five percent of adolescents in the control site and 37 percent in the intervention site had multiple partners in 2000. The numbers fell in both sites in 2002, to 33 and 30 percent respectively, but only in the intervention group was the decrease statistically significant ($X^2 = 9.01$, $p = 0.002$).

The change is attributable to both increased fidelity and increased abstinence following the intervention. Both groups started with practically identical percentages of

monogamous boys. In both sites, the proportion of boys with more than one sexual partner decreased, but so did the proportion of boys with no sexual partners—by about five points in each group. This left the intervention site with slightly fewer boys with multiple sex partners as well as slightly more abstinent boys.

Figure 1. Number of sexual partners during the past 12 months, among sexually active boys

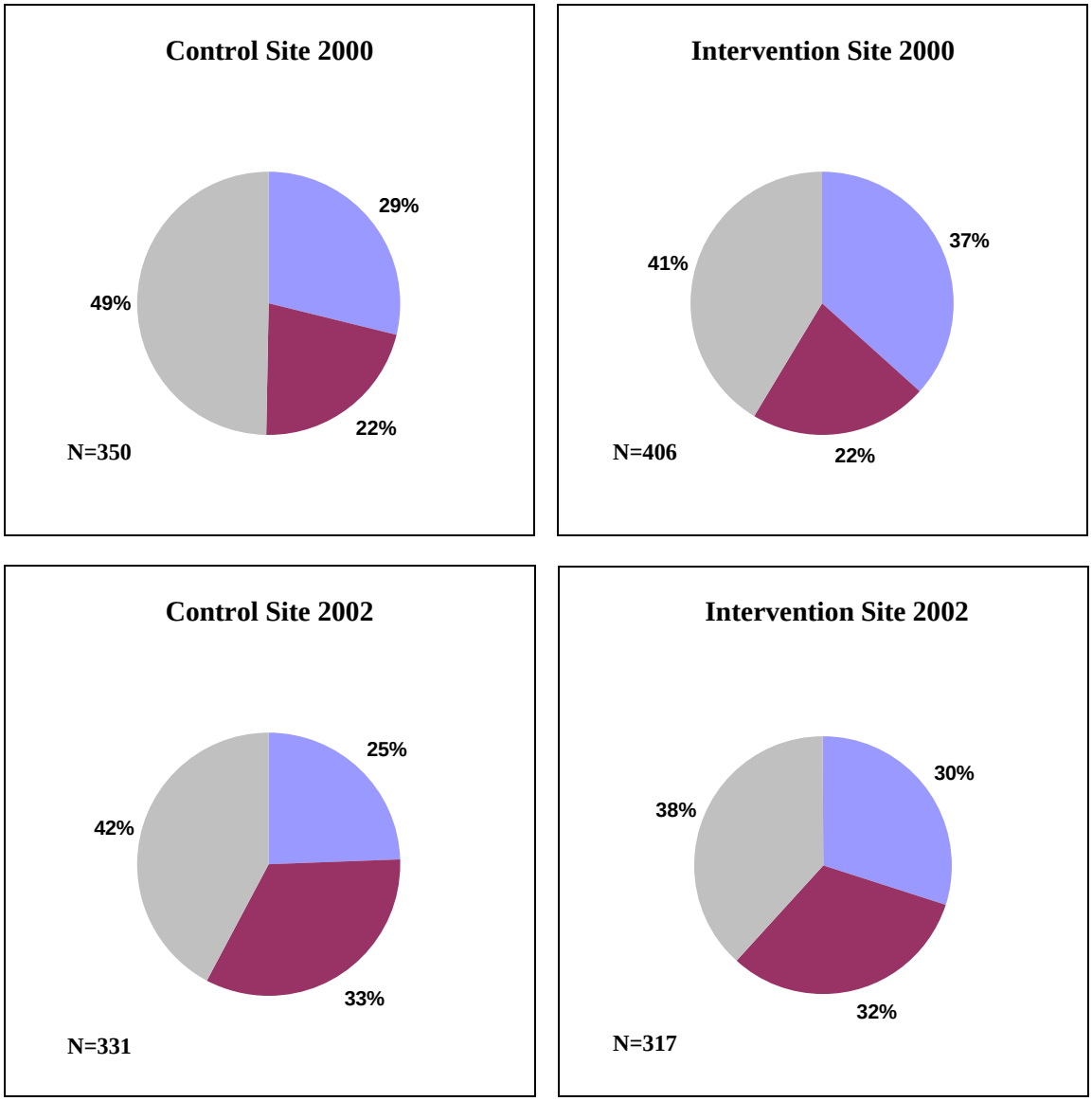
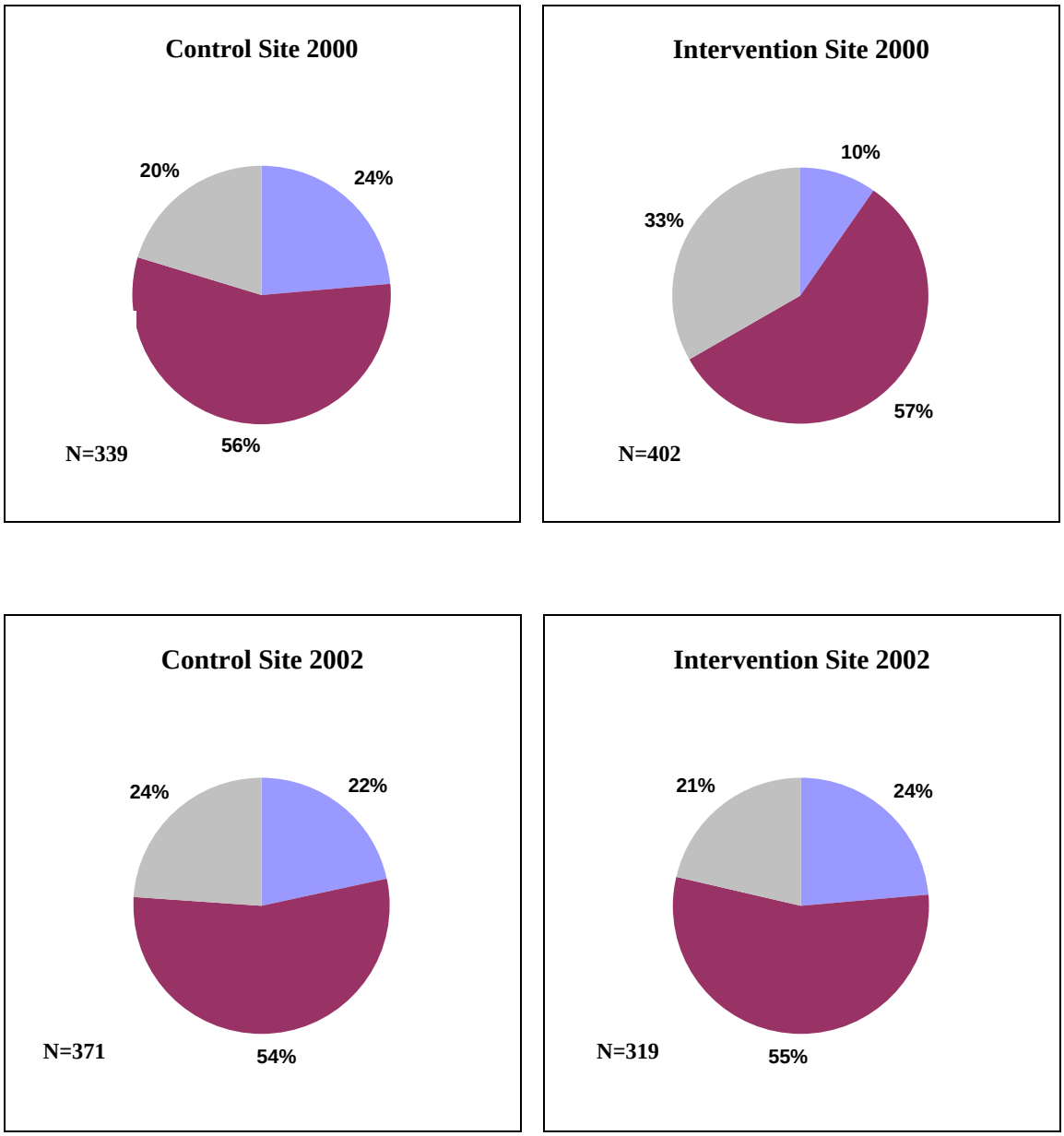


Figure 2. Number of sexual partners during the past 12 months, among sexually active girls



Control group girls in the endline sample had roughly the same distribution of sexual partners as the baseline sample. In the intervention site, the percentage of girls with one partner remained nearly constant, but the percentage of girls with two or more partners dropped significantly, from 33 to 21 percent, and the number of abstinent girls jumped from ten to 24 percent

Table 3.5 Sexually active youth who used a condom during their last sexual encounter according to type of partner

	2000		2002	
	Control %	Intervention %	Control %	Intervention %
Regular partner				
Boys	29.4 (235)	42.0 (224)	44.7*** (226)	62.2*** (188)
Girls	23.2 (259)	31.2 (355)	33.3*** (285)	42.3*** (248)
Total	26.1 (494)	35.3 (579)	38.4*** (511)	50.9*** (436)
Occasional partner				
Boys	49.5 (99)	55.8 (138)	64.7** (119)	69.3** (114)
Girls	61.5 (39)	43.8 (80)	60.9 (46)	79.3*** (29)
Total	52.9 (138)	51.4 (218)	63.6* (165)	71.3*** (143)
Commercial partner				
Boys	79.1 (43)	75.0 (24)	75.0 (40)	89.7 (29)
Girls	75.0 † (4)	48.5 (33)	89.7 (29)	77.8† (9)
Total	78.5 (47)	59.6 (57)	81.2 (69)	86.8*** (38)

* P = 0.050 ** P = 0.010 *** P = 0.000 †Sample size of less than 20

Absolute values in parentheses include only those who had this type of sexual partner.

3.4 Condom Usage

This section illustrates condom use during adolescents' last sexual encounter by type of partner: regular, occasional and commercial. It also looks at the reasons for systematic usage among youth and the behavioral norms that prevent condom use as a prevention method for both STIs/HIV and unwanted pregnancies. Table 3.5 shows that the level of condom use during the last sexual encounter is higher when the partner is less regular. This is true independent of the study phase or site.

Because both groups showed substantial improvements from 2000 to 2002, and because in most cases the baseline rates of condom use differed between intervention and control groups, the effect of the intervention is not always clear in this section. In the case of regular partners, rates of condom use at last sex increased significantly among adolescents in both intervention and control groups, 35 to 51 percent and 26 to 38 percent respectively. The same pattern is observed when the adolescents are grouped by gender: the control group starts out lower and increases to just above the baseline level of the intervention group, and the intervention group increases at approximately the same rate.

Differences between the two study arms are more notable in reported condom use with non-regular partners. The samples of boys at both sites showed significant increases in

condom use with an occasional partner, but only girls in the intervention group showed a significant—and large—improvement, increasing from 44 to 79 percent. Unlike the situation with regular partners described above, where rates of condom use increased in parallel between the sites, the increase in condom use with occasional partners is quite steep in the intervention group and use in the control group actually declined slightly, as can be seen in Figure 3.

Figure 3. Girls' condom use at last sexual encounter with occasional partner

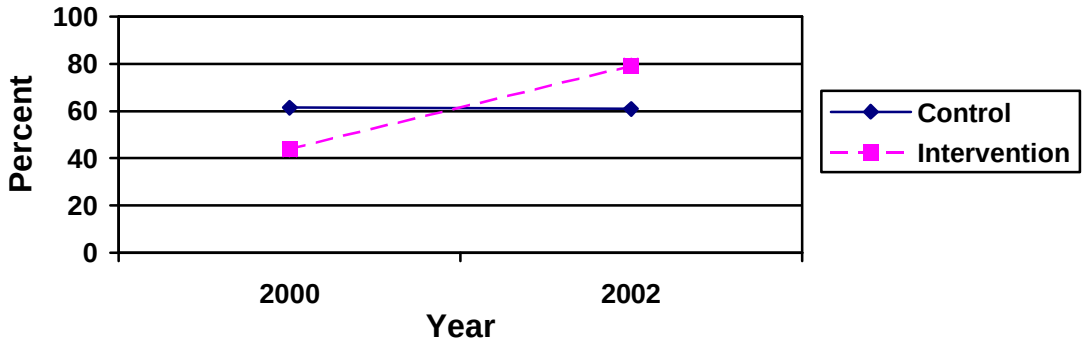
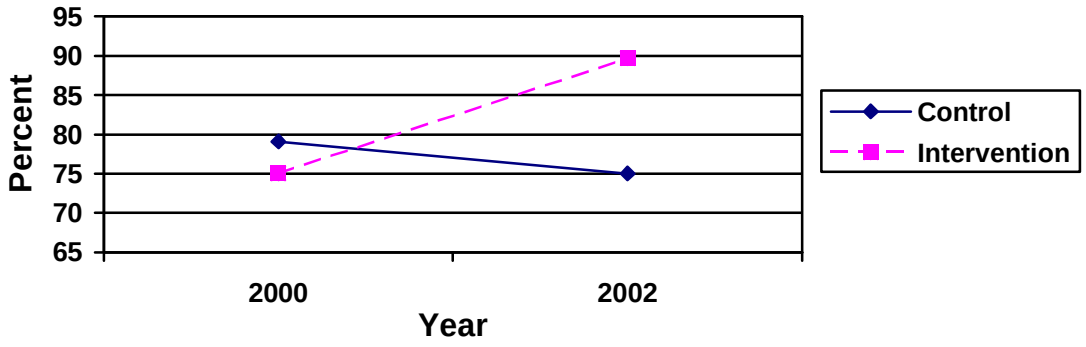


Figure 4. Boys' condom use at last sexual encounter with commercial partner



It is also worth noting that while all girls, and boys in the intervention site, used condoms far more frequently with commercial partners in 2002 than at baseline, use by control group boys with commercial partners actually dropped. Because of the small sample sizes the differences are not significant, but Figure 4 (above) illustrates the trends between the two groups of boys.

During the baseline survey in the control site 26 percent of sexually active youth said they used a condom during their last sexual encounter with a regular partner. For occasional partners the rate increased to 53 percent, and 79 percent said they used condoms in their last sexual encounter with a commercial partner. In the intervention

site, the baseline statistics were 35 percent with a regular partner, 51 percent with an occasional partner, and 60 percent with a commercial partner.

The data for 2002 demonstrate several significant improvements (see Table 3.5). In the control site, condom use during most recent sexual encounter with a regular partner rose from 26 to 38 percent, as opposed to an increase from 35 to 51 percent in the intervention site. Those who used them with occasional partners rose to 64 percent, and those who used them with commercial partners rose to 81 percent. In the intervention site the figures rose to 51, 71, and 87 percent respectively. The increase in the number of respondents in the intervention site who used a condom with their last commercial partner rose from 60 percent at baseline to 87 percent after the intervention, a remarkable increase. As the table indicates, the number of young people in the control site at baseline who used a condom with a commercial partner was far higher than those who did in the intervention site (79 versus 60 percent). It is important to note that after the intervention the usage rate in the intervention site surpassed that in the control area.

Table 3.6 Consistent condom use in the previous 12 months by type of sexual partner

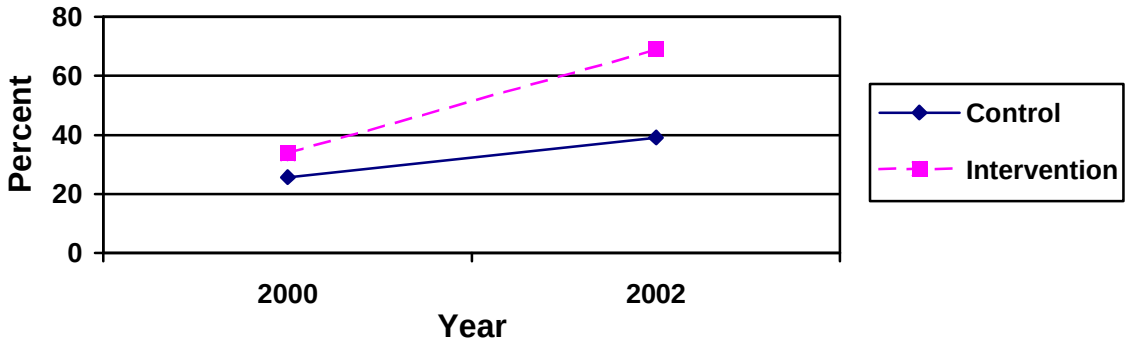
	2000		2002	
	Control %	Intervention %	Control %	Intervention %
Regular Partner				
Boys	10.6 (235)	18.8 (224)	22.1*** (226)	35.6*** (188)
Girls	4.6 (259)	11.8 (355)	10.5** (285)	20.2*** (248)
Total	7.5 (494)	14.5 (579)	15.7*** (511)	26.8*** (436)
Occasional partner				
Boys	28.3 (99)	40.6 (138)	53.8*** (119)	57.9*** (114)
Girls	25.6 (39)	33.8 (80)	39.1 (46)	69.0*** (29)
Total	27.5 (138)	38.1 (218)	49.7*** (165)	60.1*** (143)
Commercial partner				
Boys	55.8 (43)	62.5 (24)	60.0 (40)	75.9 (29)
Girls	50.0† (4)	33.3 (33)	89.7** (29)	66.7†* (9)
Total	55.3 (47)	45.6 (57)	72.5* (69)	73.7*** (38)

* P = 0.050 ** P = 0.010 *** P = 0.000 †Sample size of less than 20

Absolute values in parentheses include only youth who had this type of sexual partner.

Like condom use at last sexual encounter, the trend in consistent condom use during the previous 12 months was correlated to fidelity and trust between partners. This trend is true across sites and phases. In Table 3.6 the control site data show that 8 percent of people with regular partners used condoms consistently throughout the year in 2000, twenty-eight percent used them with occasional partners, and 55 percent used them consistently with commercial partners. In 2002 the figures rose to 16, 50 and 73 percent respectively, all significant increases.

Figure 5. Girls' consistant condom use during previous year with occasional partner



In the intervention site the number of youth using condoms consistently with regular partners increased from 15 to 27 percent. Those who always used condoms with occasional partners rose from 38 to 60 percent in 2002. And youth who had regular encounters with commercial partners during the 12 months prior to the surveys used condoms regularly in 46 percent of cases in 2000 and 74 percent in 2002.

3.5 Reasons for Condom Use and Non-Use

There are many barriers to adolescent condom use, even among youth who understand the benefits they offer. Among the reasons adolescents do not use condoms, this study explored proximal availability, partner confidence and financial accessibility.

No respondents in 2000 or 2002 said cost prevented them from using condoms. Very few said they did not use condoms because the method was not available close enough to their homes.

Table 3.7 Percentage of adolescents who knew where to buy condoms within a 10 minute walk of their residence

	2000		2002	
	Control %	Intervention %	Control %	Intervention %
Boys	59.6 (634)	60.8 (632)	73.8*** (615)	78.6*** (604)
Girls	39.2 (622)	46.8 (616)	50.2*** (611)	50.3 (634)
Total	49.5 (1,256)	53.8 (1,248)	62.1*** (1,226)	64.1*** (1,238)

***P = 0.000

Absolute values in parentheses.

Proximity to condoms was expected to be an important factor influencing utilization. Researchers were interested in learning if respondents knew at least one place where they could purchase condoms, and how long it took to walk from their home to the nearest vendor. During the baseline survey, about

half of all participants knew a place to buy condoms within a 10 minute walk of their home, and this figure increased to 62 and 64 percent in the control and intervention areas respectively at endline. Both increases are statistically significant. These overall percentages disguised the sharp differences between boys and girls: in almost every sample (see Table 3.7 above), the percentage of boys who knew where to buy condoms was at least 20 points higher than the percentage of girls. The one exception was the baseline intervention sample, where the difference was 14 percent. This may be related to the lower rates of consistent condom use among girls than boys seen above.

Table 3.8 demonstrates that to a large degree it is the type of sexual partner, regardless of the phase or site, which determines adolescent confidence resulting in inconsistent condom use. Approximately half of boys who had not used a condom in their last sexual encounter with a regular partner said it was because they trusted that partner. Trust was somewhat less of a factor for girls, but still almost one-third cited it as a reason they did not use a condom with a regular partner. After the intervention, the percentage of boys in the experimental area that used trust as an explanation for not using a condom remained fairly constant, but in absolute numbers it dropped from 62 boys to 33. In the control area, the percentage of boys who did not use condoms with a regular partner because they trusted the partner *increased* to 56 from 42. Changes among girls were marginal.

The pattern of increase in the control group and decline in the experimental group was evident in both sexes and the combined group in encounters with occasional partners, implying that experimental group adolescents became more aware that trusting a partner does not mean that unprotected sex is safe. This message did not appear to reach the control group to the same extent.

Table 3.8 Percentage of youth who did not use a condom during their last sexual encounter because they trusted their partner, among youth who did not use a condom

	2000		2002	
	Control %	Intervention %	Control %	Intervention %
Regular partner				
Boys	41.6 (166)	47.7 (130)	56.0 * (125)	46.5 (71)
Girls	27.1 (199)	30.7 (244)	28.4 (190)	29.4 (143)
Total	33.7 (365)	36.6 (374)	39.4 (315)	35.0 (214)
Occasional partner				
Boys	4.0 (50)	11.5 (61)	7.1 (42)	8.6 (35)
Girls	0.0† (15)	20.0 (45)	11.1† (18)	0.0† (6)
Total	3.1 (65)	15.1 (106)	8.3 (60)	7.3 (41)

†Sample size of less than 20

*: X^2=5.95, p= 0.014>0.01

Absolute values in parentheses include only adolescents who did not use a condom with this type of sexual partner.

Table 3.9 Percentage of adolescents who used a condom, by partner type, to prevent STI/HIV infection

	2000		2002	
	Control %	Intervention %	Control %	Intervention %
Regular partner				
Boys	78.3 (69)	80.9 (94)	81.2 (101)	84.6 (117)
Girls	71.7 (60)	72.1 (111)	60 (95)	73.3 (105)
Total	75.2 (129)	76.1 (205)	70.9 (196)	79.3 (222)
Occasional partner				
Boys	93.9 (49)	87.0 (77)	79.2 (77)	96.2 (79)
Girls	70.8 (24)	80.0 (35)	82.1 (28)	82.6 (23)
Total	86.3 (73)	84.8 (112)	80.0 (105)	93.1 (102)
Commercial partner				
Boys	91.2 (34)	94.4† (18)	86.7 (30)	100 (26)
Girls	100† (3)	81.3† (16)	84.6 (26)	85.7† (7)
Total	91.9 (37)	88.2 (34)	85.7 (56)	97.0 (33)

†Sample size of less than 20

Absolute values in parentheses include only adolescents who used a condom with this type of sexual partner.

Table 3.10 Percentage of adolescents who used a condom, by partner type, to prevent pregnancy

	2000		2002	
	Control %	Intervention %	Control %	Intervention %
Regular partner				
Boys	71.0 (69)	55.3 (94)	48.5 (101)	72.6 (117)
Girls	65.2 (60)	66.7 (111)	71.6 (95)	70.5 (105)
Total	69.0 (129)	61.5 (205)	59.7 (196)	71.6 (222)
Occasional partner				
Boys	44.9 (49)	50.6 (77)	36.4 (77)	49.4 (79)
Girls	70.8 (24)	42.9 (35)	42.9 (28)	43.5 (23)
Total	53.4 (73)	48.2 (112)	38.1 (105)	48.0 (102)
Commercial partner				
Boys	8.8 (34)	27.8† (18)	6.7 (30)	7.7 (26)
Girls	33.3† (3)	37.5† (16)	69.2 (26)	28.6† (7)
Total	10.8 (37)	32.4 (34)	35.7 (56)	12.1 (33)

†Sample size of less than 20

Absolute values in parentheses include only adolescents who used a condom with this type of sexual partner.

Condoms offer dual protection against undesired pregnancies and sexually transmitted diseases, including HIV/AIDS. Tables 3.9 and 3.10 present the proportion of adolescents who used condoms during their last sexual encounters with different types of partners to avoid unwanted pregnancies and to protect against disease transmission.

Table 3.9 illustrates that there was a slight reduction in the number of youth in the control site who used condoms with commercial partners to prevent disease transmission (from 92 to 86 percent). There were similar but larger drops among boys with occasional partners (15 percentage points) and girls with regular partners (12 points) in the control site. The proportion of youth in the experimental group citing disease prevention as a motivation for using condoms increased among boys and girls with all types of partners.

The proportions of adolescents using condoms for pregnancy prevention was much lower than those using them for disease prevention—in most cases roughly half, among each gender individually and combined, and with regular and occasional partners. No data was collected on other contraceptives, so it is not certain whether these adolescents are less concerned with pregnancy, or whether they use alternate methods to avoid it. Nevertheless, the results indicate that adolescents in Yaoundé and Douala consider the condom as a barrier to sexually transmitted diseases more than as a contraceptive.

3.6 STI Infection

Overall, rates of STI symptoms remained fairly constant, with the notable exception of boys in the intervention group, which saw a significant decrease from 25 to 18 (see Table 3.11). Even with this decrease, however, their rate of STI symptoms remained higher than that of the boys in the control group. Another striking results is that girls reported symptoms of STI at double or quadruple the rate of boys. It is not possible to tell whether those with symptoms actually had an infection, or if girls were suffering from non-sexually transmitted reproductive tract infections, but half of girls at both sites reporting one or more STI symptom does demonstrate the need for clinical services for STI case management as well as interventions promoting behavior change.

Table 3.11 Youth who experienced at least one symptom of STI infection during the previous 12 months

	2000		2002	
	Control %	**Intervention %**	**Control %**	**Intervention %**
Boys	15.0 (634)	25.2 (632)	14.5 (615)	18.0*** (604)
Girls	55.0 (622)	46.4 (616)	58.8 (611)	50.8 (634)
Total	34.8 (1,256)	35.7 (1,248)	36.5 (1,226)	34.8 (1,238)

*** P = 0.000

Absolute values in parentheses

IV CONCLUSIONS

The effects of IRESCO's "Among Youth" project on adolescent reproductive health in Cameroon were generally positive. The results presented in this report show that adolescents in Mokolo, more often than their counterparts in New Bell, adopted behavioral changes to prevent STIs/HIV transmission and unwanted pregnancies as a result of the intervention.

Adolescents in both the control and intervention sites have high levels of knowledge regarding HIV/AIDS prevention methods, but their behaviors do not always reflect this knowledge. Condom use remains insufficient. Fidelity and abstinence were known prevention methods, but condom use with commercial and occasional partners remains inconsistent in over half of adolescents in the intervention area. Many adolescents say that they do not use condoms because they are confident their partner is healthy. However, the portion of respondents in the intervention site who used a condom during their last sexual encounter with a commercial partner went up significantly after the intervention.

Further efforts must be made to make condoms more accessible to youth. In the two sites targeted in this study, about one out of three adolescents did not know where to obtain condoms within a 10-minute walk of their home. In general, fewer girls than boys know where condoms are available.

Most urban Cameroonian adolescents are exposed to reproductive health messages through mass media channels. In total an estimated 200,000 adolescents received reproductive health information directly through IRESCO's "Among Youth" campaign. But hearing the messages alone does not necessarily result in behavior change. Peer education combined with mass media campaigns form an important strategy for targeting youth with reproductive health and family planning messages. After the social marketing project was implemented, through direct peer to peer communication efforts, sporting events, informational kiosks and video screenings and discussions, researchers found that the control and intervention groups had similar levels of knowledge, but larger behavioral changes were observed among youth in the intervention site. We attribute these changes to the peer education outreach efforts, which emphasized interpersonal communication and reinforced the reproductive health messages adolescents received from mass media including IRESCO's magazine. Peer education efforts, discussions, and IEC materials can help adolescents translate knowledge into healthy lifestyles. Integration of reproductive health messages into popular youth activities, such as sports and cultural events, was also found to be a successful strategy for reinforcing messages and discussing sensitive issues affecting adolescents' lives in greater depth.

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