

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/321033629>

KNOWLEDGE, ATTITUDES AND PRACTICES OF SEX WORKERS AND MEN WHO HAVE SEX WITH MEN IN NICARAGUA

Technical Report · July 2001

CITATIONS

0

READS

196

1 author:



[Muyiwa Oladosun](#)

Covenant University Ota Ogun State, Nigeria

55 PUBLICATIONS 355 CITATIONS

SEE PROFILE

**KNOWLEDGE, ATTITUDES AND PRACTICES OF
SEX WORKERS AND
MEN WHO HAVE SEX WITH MEN
IN NICARAGUA**

**PAN AMERICAN SOCIAL MARKETING ORGANIZATION
(PASMO)**

2001

Muyiwa Oladosu
Sara Alden

ACKNOWLEDGEMENTS

The authors acknowledge the contributions made by several individuals and organizations to the successful completion of this report. Many thanks to Daun Fest who made the study possible, from the planning phase to the data collection, analysis and report. We would also like to thank Elizabeth Beachy and Giovanni Meléndez Mollinedo for their helpful suggestions and Megan Klein for editing. We are grateful to the Instituto Latinoamericano de Previsión Educativa y Cultural (ILPES) for doing the data collection. The U.S. Agency for International Development provided funding for this study.

TABLE OF CONTENTS

TABLES AND FIGURES

ACKNOWLEDGEMENTS

ACRONYMS

EXECUTIVE SUMMARY

CHAPTER 1: INTRODUCTION

- 1.1 Background on PASMO
- 1.2 Study objective
- 1.3 Background on Nicaragua
- 1.4 HIV/AIDS in Central America
- 1.5 HIV/AIDS in Nicaragua

CHAPTER 2: METHODOLOGY

- 2.1 Sample design
 - 2.1.1 Sampling design for MSM
 - 2.1.2 Sampling design for SW
- 2.2 Data collection
- 2.3 Data analysis

CHAPTER 3: MEN WHO HAVE SEX WITH MEN

- 3.1 Sample characteristics
- 3.2 Risky sexual behavior
- 3.3 Awareness and knowledge of HIV/AIDS
 - 3.3.1 Exposure to information about HIV/AIDS
 - 3.3.2 MSM's reasons for using condoms
- 3.4 Exposure to specific social marketing programs
- 3.5 Participation in PASMO and Skills Demonstration
- 3.6 Condom availability and accessibility
 - 3.6.1 Usual and preferred source of condoms
 - 3.6.2 Opinion about the price of condoms
- 3.7 Self-efficacy
- 3.8 Demonstration of skills in condom use
- 3.9 Participation in PASMO skills demonstration and condom use
- 3.10 Condom use
- 3.11 Knowledge and use of lubricants

CHAPTER 4: COMMERCIAL SEX WORKERS

- 4.1 Demographic characteristics of sex workers
- 4.2 Risky sexual activity
- 4.3 Awareness and knowledge of SW about HIV/AIDS
 - 4.3.1 Exposure to HIV/AIDS information
 - 4.3.2 Sex workers' reasons for using condoms
- 4.4 Exposure to social marketing programs
- 4.5 Participation in PASMO programs
- 4.6 Condom availability and accessibility
 - 4.6.1 SW usual and preferred source of condoms
 - 4.6.2 SW opinions about the price of condoms
- 4.7 Self-efficacy
- 4.8 Sex workers' skills in condom usage
- 4.9 Condom demonstrations and use
- 4.10 Condom use
- 4.11 Knowledge and use of lubricants

CHAPTER 5: CONCLUSIONS & PROGRAM IMPLICATIONS

- 5.1 Men who have sex with men
- 5.2 Sex workers

REFERENCES

TABLES AND FIGURES

Table 1: Demographic Characteristics of MSM in Nicaragua

Table 2: Trends in MSM's Risky Sexual Activity

Table 3: Trends in MSM's Type of Sexual Partners

Table 4: Trends in Exposure of MSM to Information on HIV/AIDS

Table 5: Trends in MSM's Reasons for Using Condoms

Table 6: Percentage of MSM Exposed to Specific Social Marketing Advertisements

Table 7: Percentage of MSM who Participated in PASMO Activities

Table 8: Trends in MSM's Reported Availability and Affordability of Condoms

Table 9: Trends in MSM's Intended Condom Use with Various Partners

Table 10: Trends in MSM's Skills in Condom Use

Table 11: Percentage of MSM who Participated in a PASMO Activity by
Demonstration of Correct Use of Condoms (2000)

Table 12: Trends in the Percentage of MSM who Used a Condom in Last Sex
Act by Type of Partner

Table 13: Trends in MSM's Knowledge and Use of Lubricants

Table 14: Demographic Characteristics of Sex Workers in Nicaragua

Table 15: Trends in Risky Sexual Activity of SWs

Table 16: Trends in the Proportion of SWs who Currently have Sex with Men

Table 17: Trends in SWs' Exposure to Information on HIV/AIDS

Table 18: Trends in SWs' Reasons for Using Condoms

Table 19: Percentage of SWs Exposed to Specific Social Marketing Advertisements

Table 20: Percentage of SWs who Participated in PASMO Activities

Table 21: Trends in SWs' Reported Availability and Affordability of Condoms

Table 22: Trends in SWs' Intended Condom Use with Various Partners

Table 23: Trends in SWs' Skills Demonstration of Correct Condom Use

Table 24: Percentage of SWs who Participated in a PASMO Activity by
Demonstration of Correct Use of Condoms (2000)

Table 25: Trends in SWs' Condom Use in the Last Sex Act by Partner Types

Table 26: Trends in Indicators of Lubricants

ACRONYMS

AIDS =	Acquired Immune Deficiency Syndrome
CEPRESI =	Centro Para la Educación y Prevención del SIDA
HIV =	Human Immunodeficiency Virus
IEC =	Information, education and communication
ILPES =	Instituto Latinoamericano de Prevención Educativa en Salud
KAP =	Knowledge, attitudes and practices
LACEN =	Latin American and Caribbean Epidemiological Network
MOH =	Ministry of Health
MSM =	Men who have sex with men
NGO =	Non-Governmental Organization
PASMO =	Pan American Social Marketing Association
SWs =	Sex workers
UNAIDS =	United Nations Program on AIDS
WHO =	World Health Organization

EXECUTIVE SUMMARY

Objective

This study was conducted to understand the extent to which the knowledge, attitudes and practices of men who have sex with men (MSM) and sex workers (SWs) in Nicaragua have changed from 1997 to 2000. During this time, Pan American Social Marketing Organization (PASMO) and other non-governmental organizations (NGOs) implemented a program intervention on HIV/AIDS. PASMO began working in Nicaragua in Spring 1998. In the beginning of 2000, PASMO began implementing behavior change activities with targeted high-risk populations.

Study Design

This study was conducted with representative samples of 300 low-income MSM and 400 SWs in the metropolitan area of Managua, the capital city. It discusses changes among the two groups that occurred between 1997 and 2000 in the exposure to information on HIV/AIDS, the perceived risk of contracting HIV/AIDS, perceived self-efficacy, skills in correct condom use, and condom usage.

Changes among MSM

- More MSM now engage in risky sexual activity with both male and female partners than in 1997
- Main source of information on condoms changed from interpersonal communications to the mass media

- MSM now have more knowledge on the benefits of condoms than in 1997, but this did not translate to a significant increase in consistent condom use with all partners
- Although there was no significant improvement in condom use skills, MSM who participated in any PASMO activity were more likely to demonstrate correct use
- MSM are less likely to consistently use condoms with all partners than in 1997
- MSM's access to condoms improved between 1997 and 2000.

Changes among SWs

- Despite increased exposure to condom information through multiple communication channels, more SWs reported unsafe sex in 2000 than in 1997
- SWs' knowledge of the benefits of condoms declined during the study period
- Less than half of SWs' were able to demonstrate correct condom use in 1997. This did not improve during the study period
- The proportion of SWs who consistently used condoms with all clients declined over the study period. There was also a decrease in self-efficacy during the same period
- SWs' preferred sources of condoms are the pharmacy and health establishments.

Conclusions

MSM: There was a significant increase in risky sexual activity with all partner types at the same time as a change in the main source of information on condoms— from interpersonal communication to the mass media. The increased knowledge of the benefits of condoms did not translate to increased consistent condom use. Program interventions that provide quality

information on the benefits of condoms and the skills to use condoms correctly may increase MSM's consistent condom use with all partners.

SWs: Increased exposure to information on condoms from multiple channels of communication did not translate to increased knowledge of the benefits of condoms or decreased risky sexual activity among *SWs*. Self-efficacy declined during the study period, as well as correct condom use skills. Specific program interventions that provide quality information on the benefits of condoms and correct condom use skills may help *SWs* to consistently use condoms with all partners.

CHAPTER 1

INTRODUCTION

1.1 Background on PASMO

Established in 1996, the Pan American Social Marketing Organization (PASMO) is dedicated to increasing the demand for and consistent use of priority health products and services among low-income consumers and other vulnerable populations in the Central American region. PASMO uses social marketing techniques to:

- Increase knowledge of condoms and correct, consistent use
- Increase access to affordable condoms, especially among high-risk groups
- Establish an effective regional social marketing organization that will a) maximize the public health impact, b) minimize financial vulnerability, and c) strengthen institutional capacity
- Create positive behavior change by implementing PSI's targeted communication and behavior change models.

VIVE (Live!) condoms hit the Costa Rican market in 1997 and have since been launched in Guatemala, El Salvador, Belize, Nicaragua, Honduras, and Panama. Affordable *VIVE* condoms—which range in price from US \$0.30 per 3-pack in Nicaragua to US \$0.85 per 3-pack in Panama—are made available through a variety of traditional and non-traditional outlets including pharmacies, supermarkets, bars, and nightclubs. The slogan *VIVE Tu Mejor Momento* (Live your best moment) appears on *VIVE* packaging and accompanies print materials and mass media activities such as TV, radio, billboard, and newspaper ads.

To accomplish its goals, PASMO employs targeted communication and behavior change strategies, condom social marketing techniques, community-based distribution networks, and continuous research and program evaluation. PASMO also works through local NGOs to reach target groups.

1.2 Study Objective

Since 1996, PASMO has developed and maintained an effective regional social marketing program with the goal of enhancing the Central American capacity to respond to HIV/AIDS. In order to assess overall progress toward this goal, PASMO has conducted baseline (1997) and follow-up (2000) knowledge, attitude and practice (KAP) surveys among men who have sex with men (MSM) and sex workers (SWs) in the region. This study examines the key behavior change indicators among the two target populations. Changes in the indicators of condom usage, perceived access to affordable condoms, understanding of correct condom use, perceived self-efficacy in condom use, and knowledge of HIV/AIDS prevention are discussed.

Research is a critical component in PASMO's condom social marketing program. Survey results from 1997 informed program interventions. Findings from the follow-up study in 2000 will help PASMO evaluate its efforts and those of partner NGOs. Research findings help PASMO to develop appropriate promotional materials; create appropriate interpersonal models; and fine-tune the information, and behavior change strategy.

1.3 Background on Nicaragua

Covering an area of 129,494 square kilometers, Nicaragua is the largest country in Central America. Nicaragua, with a population of 4,813,000 people, is the second poorest country in Central America. Half of all Nicaraguans reside in urban areas and have incomes below the poverty level. One-third of all adults are illiterate. The birth rate is 28 per 1000, the death rate is five per 1000, and the annual growth rate is 2.2%. The average life expectancy at birth is about 69 years and the total fertility rate is 3.3 per woman (US Census Bureau, 2000). Mestizos are 69% of the population, and Garifunas (blacks of African or Caribbean descent) and Amerindian are minority. Spanish is the official language, with some English and indigenous language speakers in the east coast of the country.

1.4 HIV/AIDS in Central America

Available data suggests that HIV/AIDS is increasing in Central America. However, due to a lack of adequate surveillance, the actual number of HIV/AIDS cases in the region is unknown. Estimates from UNAIDS (2000b) suggest that nearly 200,000 adults and children in Belize, Costa Rica, Guatemala, Honduras, Nicaragua, and Panama could be infected. The prevalence rates in the region range from 0.20% in Nicaragua to 2.01% in Belize (UNAIDS, 2000). Key goals of government agencies and non-governmental organizations include increasing the amount of quality surveillance data and promoting prevention among high risk groups in the region (UNAIDS, 2000).

1.5 HIV/AIDS in Nicaragua

In 1987, the first patient was diagnosed with HIV/AIDS in Nicaragua. By 1999, UNAIDS estimated that there were 4,938 cases of HIV. In 2000, the estimated prevalence rate of 0.2%

among adults was the lowest in Central America (UNAIDS, 2000). As of 1991 HIV prevalence among SWs was 1.6%, higher than the estimated rate for the whole country nearly ten years later (UNAIDS, 2000).

Eighty-eight percent of transmission occurs through sexual intercourse (Proyecto Acción SIDA de Centroamérica [PASCA], 1999), 57% of which is through heterosexual sex (Latin American and Caribbean Epidemiological Network [LACEN] et al., 2000). As of 1999, three-quarters of the Nicaraguans living with HIV/AIDS were men. The ratio of infected men to women has however, changed from 6 to 1 in 1988 to 3 to 1 in 1999, suggesting more women than men are being infected or that there is better increased surveillance and diagnosis of women (PASCA, 1999).

Throughout the 1990s, efforts were made to educate risk groups and the general population about the growing HIV/AIDS epidemic. A condom promotion campaign conducted between 1991 and 1997 among people with multiple sexual partners on the Caribbean coast showed increased condom use, 35% to 71% (LACEN et al., 2000). Although awareness level of HIV/AIDS was high in 1998 (PASCA, 1999), the Nicaraguan government and NGOs believe the rate of infection is growing. Statistics show that the average number of cases reported per month increased from 2.75 in 1993 to 7.6 in the first nine months of 1999. The statistics provided above are limited by low level of HIV/AIDS surveillance in Nicaragua.

CHAPTER 2

METHODOLOGY

2.1 Sample Design

Due to differences in their sexual life styles, identification, visibility and location, the sampling design for MSM and SWs were different. This was especially true for the construction of the sampling frame. To ensure our ability to compare the results, the sample design for 1997 and 2000 were comparable for both target populations.

2.1.1 Sampling Design for MSM

The 300 MSM included in this survey were adults age 18 or older who lived in the Managua metropolitan area at the time of the survey. Since this sub-group was difficult to identify and locate, consideration was given during the construction of sampling frame to easy access to areas where they usually congregate. Interviewers who were MSM constructed the sampling frame since they were more likely to know where to find other MSM.

In total, eight establishments where MSM were likely to visit were included in the study. The cooperation of establishment owners enabled the collection of detailed information on days and hours of operation, and an estimated number of visitors per establishment per day.

The estimated number of patrons was used to apportion the sample with the probability proportional to the size of the estimated population that visit the establishments. Since the volume of traffic to any establishment may depend on the hour of the day, interview times were selected at random to reduce this bias. At a randomly selected hour, the first five MSM that

visited the establishment were interviewed. Since the probability of inclusion in the sample depends on frequency of visits, the study attempted to weight the sample. Despite the weighting, the distribution of the weighted sample was not significantly different from that of the unweighted sample.

2.1.2 Sampling Design for SWs

The study includes 400 sex workers who lived in the Managua metropolitan area at the time of interview. The sample was drawn to represent sex workers in the low socioeconomic group and who meet their clients at either known sex establishments or on the street. The sampling design includes a listing of social meeting places, sex establishments, and street areas where sex workers gather (bars, taverns, saloons, and other meeting places).

Two lists were compiled. The first included known sex establishments, their opening and closing times, the average number of sex workers that work there per day, and their work schedule. The second list included information on location, meeting and possible pick-up areas, addresses of blocks covered, days worked and the working hours for sex workers who meet clients on the street. Additional information was collected from street SWs on whether they were limited to one street or whether they worked freely throughout an area.

The information gathered was used to estimate the total number of sex workers in the area. The bias in estimation was recognized since sex workers – particularly those who meet clients on the streets – were very mobile. The estimated number of sex workers in the area was used to select sex workers with probability proportion to size. The first five sex workers in the establishment

at a randomly selected hour were interviewed. For sex workers on the street, interviews were conducted with SWs at a given location at a randomly selected hour of the day. Information on the frequency of visits was intended to weight the data; however, this was not necessary since weights did not significantly alter the sample distribution.

2.2 Data Collection

The implementation of the surveys for both MSM and SWs was done by ILPES (Instituto Latinoamericano de Prevencion y Educacion en Salud) a research agency in San Jose, Costa Rica. A coordinator and five interviewers based in Managua pre-tested the questionnaire, checked for inconsistencies, and collected the data. Questions were on demographic characteristics, types of partners, sexual behavior, use of condoms with clients, self-efficacy, awareness and knowledge of HIV/AIDS, and channels of information on HIV/AIDS. Other questions included knowledge and use of lubricants, drug and alcohol use, awareness and participation in HIV/AIDS activities, and knowledge and attitudes about HIV/AIDS treatment (cocktail). The final pre-coded questionnaire consisted of approximately 200 questions. Each interview lasted roughly 24 minutes and data collection lasted about three weeks. The degree of cooperation among SWs and MSM was generally high (above 90%).

2.3 Data Analysis

Most of the tables in this report present adjusted percentages for 1997 and 2000. Other tables show percentages for only 2000, reflecting indicators on programs activities introduced after 1997. Multiple classification analysis (MCA) was used to derive percents adjusting for sample

differences in age, level of education, and residence. The statistical significance (P-trends) of changes in percentages between the two time periods was determined with the F-test.

CHAPTER 3

MEN WHO HAVE SEX WITH MEN

3.1 Sample Characteristics

The majority of MSM interviewed were young men aged 20 to 29 (57%) having at least some secondary education (93%). Forty-five percent defined themselves as bisexual, while 42% defined themselves as homosexual, and 13% considered themselves to be heterosexual.

Although the majority of MSM were single (91%), without children (73%), 59% had one or more dependants. Most MSM (64%) were in the lowest income category earning less than \$200 per month, while 21% earned between \$200 and \$400 per month, leaving only 15% with monthly earnings above the Nicaraguan poverty level of \$400 per month (U.S. Department of Labor, 2000).

3.2 Risky sexual behavior

As Table 2 shows, between 1997 and 2000, there were significant increases in risky sexual behavior with both men and women. Specifically, the number of MSM who had penetrated a man without a condom in the past 12 months increased from 23% to 41% ($p < .001$). The number reporting vaginal sex without a condom increased from 9% to 46% during the same period ($p < .001$). Those who had had anal sex with a woman increased from 5% to 20% ($p < .001$). While MSM reporting oral sex without a condom decreased from 43% to 22% ($p < .001$).

There was a substantial increase in the number of MSM who engaged in heterosexual activity (Table 3). In 1997, 84% reported sex only with men, compared to only 43% in 2000 ($p < .001$).

In 1997, 16% reported having sex with both men and women compared to 57% in 2000 ($p < .001$).

Table 1: Demographic characteristics of MSM in Nicaragua

	%
Age Group	
< 20	13
20 – 24	34
25 – 29	23
30 – 34	16
35 or more	15
Total (N)	300
Level of Education	
Some primary/completed primary	7
Some secondary or more	93
Total (N)	300
Religion	
Catholic	67
Other Christians	16
Total (N)	300
Marital Status	
Not married	91
Married/living with partner	9
Total (N)	300
Number of Children	
None	73
One or more	27
Total (N)	300
Number of Dependents	
None	41
One or more	59
Total (N)	300
Estimated Income (per month in dollars)	
200 or less	64
201 – 400	21
401 or more	15
Total (N)	300
Self-Definition	
Heterosexual	13
Homosexual/Gay	42
Bisexual/Other	45
Total (N)	300

Table 2: Trends in MSM's risky sexual activity (adjusted percentages)†

Indicators		Baseline 1997	Follow-up 2000	P(trend)
Penetrated a man in the last 12 months without Using condoms %		23	41	.000***
	N	296	297	
Penetrated by a man in the last 12 months without using condoms	%	38	32	.202
	N	294	294	
Had vaginal sex in last 12 months without Using condoms %		9	46	.000***
	N	296	297	
Had anal sex with a woman in last 12 months without Using condoms %		5	20	.000***
	N	296	297	
Had oral sex in last 12 months without using condoms	%	43	22	.000***
	N	295	297	

† Percentages are adjusted for sample differences in age, level of education and residence; p(trend) * = p < .05, ** = p < .01 and *** = p < 0.001

Table 3: Trends in MSM's type of sexual partners (adjusted percentages)†

Indicators		Baseline 1997	Follow-up 2000	P(trend)
Currently have sex with men, women or both:				
Have sex with only men	%	84	43	.000***
	N	296	297	
Have sex with men and women	%	16	57	.000***
	N	296	297	

† Percentages are adjusted for sample differences in age, level of education and residence; p(trend) * = p < .05, ** = p < .01 and *** = p < 0.001

This combination of increased risky sexual activity and growing bisexual behavior is of great concern. This bisexual population may facilitate the spread of HIV/AIDS and other STDs to the general population more than previously understood.

3.3 Awareness and Knowledge of HIV/AIDS

3.3.1 Exposure to Information about HIV/AIDS

MSM received significantly more information on condoms through the mass media and less through interpersonal sources between 1997 and 2000 (Table 4). Between 1997 and 2000, the percentage who learned about condoms on television increased from 44% to 75% ($p < .001$), those who heard about condoms on the radio nearly tripled from 26% to 71% ($p < .001$). The percentage of MSM who received information about condoms through the newspaper also increased from 49% to 61% ($p < .01$). At the same time, the number exposed to pamphlets and posters promoting condom use decreased from 94% to 76% ($p < .001$).

The number of MSM who received information through friends (91% to 67%, $p < .001$), gay organizations (73% to 37%, $p < .001$) and MOH workshops (53% to 36% ($p < .01$)) significantly decreased. There were slight significant increases in those who received information from their families (23% to 33%, $p < .01$), their church or clergy (6% to 13%, $p < .01$) and government AIDS phone lines (3% to 9%, $p < .01$).

**Table 4: Trends in exposure of MSM to information on HIV/AIDS
(adjusted percentages)†**

Indicators		Baseline	Follow-up	P(trend)
Have you received information about condoms from:		1997	2000	
TV	%	44	75	.000***
	N	296	294	
Radio	%	26	71	.000***
	N	296	294	
Newspapers	%	49	61	.006**
	N	296	294	
Pamphlets/posters	%	94	76	.000***
	N	296	293	
Friends	%	91	67	.000***
	N	296	294	
Partner/lover	%	64	56	.061
	N	296	294	
Family	%	23	33	.009**
	N	296	294	
Organizations for gays	%	73	37	.000***
	N	296	294	
Church or church minister	%	6	13	.005**
	N	296	295	
Workshop activity with MOH	%	53	36	.007**
	N	296	297	
Govt. phone line on AIDS	%	3	9	.008**
	N	296	295	
NGO phone line on AIDS	%	12	13	.596
	N	296	295	
NGO workshop on AIDS	%	60	21	.000
	N	296	295	
The internet	%	-	11	
	N		298	

† Percentages are adjusted for sample differences in age, level of education and residence; p(trend) * = p < .05, ** = p < .01 and *** = p < 0.001

3.3.2 MSM's Knowledge of the Advantages of Condoms

In this study, knowledge of the advantages of condoms was measured by series of questions asking respondents why they used condoms with partners. Findings (Table 5) show significant increases in the percentage of MSM who said hygiene and STD prevention are reasons to use condoms with both stable and occasional partners. The percentage of MSM who used condoms with stable male partners for hygiene increased from 15% to 58% ($p < .001$), and those who used condoms to prevent STDs increased from 77% to 98% ($p < .01$).

MSM who used condoms with occasional partners for hygiene increased from 26% to 36% ($p < .05$), while those who used them to prevent STDs increased from 72% to 92% ($p < .001$).

Although the percentage of MSM who used condoms with stable or occasional partners were high, there was no significant change between 1997 and 2000.

3.4 Exposure to Specific Social Marketing Programs

PASMO's condom social marketing activities may have contributed to MSM's awareness and knowledge about condom and HIV/AIDS prevention. Table 6 shows that most MSM (94%) have seen or heard VIVE condoms advertisements. Seventy-seven percent recalled seeing the "bus" advertisement, 74% had been exposed to the "birthday" campaign, 71% recalled the "la seguridad" campaign, and 69% had seen or heard the "tu eliges" campaign.

**Table 5: Trends in MSM's reasons for using condoms
(adjusted percentages)†**

Indicators		Baseline 1997	Follow-up 2000	P(trend)
Use condoms with stable male partner:				
For hygiene	%	15	58	.000***
	N	180	110	
To prevent STDs	%	77	98	.007**
	N	180	110	
To prevent AIDS	%	91	100	.361
	N	180	110	
For other reasons	%	7	2	.083
	N	180	109	
Use condoms with occasional male partner:				
For hygiene	%	26	36	.031*
	N	260	179	
To prevent STDs	%	72	92	.000***
	N	260	178	
To prevent AIDS	%	88	86	.462
	N	260	179	

† Percentages are adjusted for sample differences in age, level of education and residence; p(trend) * = p < .05, ** = p < .01 and *** = p < 0.001

Table 6: Percentage of MSM exposed to specific social marketing advertisements

Indicators		2000
Seen or heard advertisement on VIVE condom	%	94
	N	300
Have seen on TV advertisement about: The bus	%	77
	N	300
The birthday	%	74
	N	300
"Tu Eliges"	%	69
	N	300
"La seguridad tiene muchos nombres"	%	71
	N	300
Other commercials	%	2
	N	300

3.5 Participation in PASMO Activities

PASMO began implementing behavior change activities targeting MSM in May 2000 only few months before the survey. This may explain why only 13% of the MSM had participated in a PASMO activity. The findings in Table 7 also show that only 9% had participated in an AIDS prevention activity. Eight percent had seen a VIVE condom display, 4% had seen the “VIVE Movil,” and 2% had attended a “Noches VIVE.”

3.6 Condom Availability and Accessibility

3.6.1 Usual and preferred sources of condoms

Findings in Table 8 show an increase in the number of MSM who purchased and prefer to purchase condoms in pharmacies. Between 1997 and 2000, the percentage of MSM whose usual source of condoms was a pharmacy increased from 36% to 62% ($p < .001$), while those who obtained condoms from NGOs decreased from 57% to 4% ($p < .001$). At the same time, the percentage that preferred to purchase condoms from pharmacies increased from 42% to 80% ($p < .001$).

3.6.2 Opinions about the price of condoms

Results in Table 8 suggest that condoms are now increasingly affordable to low-income MSM. The percentage who believed that condoms are inexpensive nearly tripled from 30% to 83% ($p < .001$), the percentage of MSM who said condoms price is regular decreased (47% to 13%, $p < .001$) and the proportion who think that condoms are expensive declined from 23% to 4% ($p < .001$).

Table 7: Percentage of MSM who participated in PASMO activities

Indicators	Baseline 1997	Follow-up 2000
Participation in PASMO Activities		
Any PASMO activity	% N	13 298
Prevention of AIDS	% N	9 298
To promote correct condom use	% N	9 298
Seen any VIVE condom displays	% N	8 298
Las "Noches VIVE"	% N	2 298
Seen VIVE Movil	% N	4 298
Other activities	% N	4 298

Percentages are adjusted for sample differences in age, level of education and residence; p(trend) * = $p < .05$, ** = $p < .01$ and *** = $p < 0.001$

Table 8: Trends in MSM's reported availability and affordability of condoms (adjusted percentages)†

Indicators		Baseline 1997	Follow-up 2000	P(trend)
Usual Source of Condoms				
Source of condoms is store/supermarket	%	2	3	.297
	N	296	295	
Source of condoms is private pharmacy	%	36	62	.000***
	N	296	295	
Source of condoms is NGO	%	57	4	.000***
	N	296	295	
Other sources of condoms	%	4	5	.453
	N	296	295	
Preferred Source of Condom				
Preferred source of condoms is store/supermarket	%	2	5	.088
	N	296	296	
Preferred source of condoms is private pharmacy	%	42	80	.000***
	N	296	296	
Preferred source of condoms is NGO	%	44	2	.000
	N	296	296	
Preferred other sources of condoms	%	11	9	.570
	N	296	295	
Opinions about the price of condoms				
Condoms are expensive	%	23	4	.000***
	N	272	279	
Condoms are regular	%	47	13	.000***
	N	272	279	
Condoms are cheap	%	30	83	.000***
	N	272	279	

†Percentages are adjusted for sample differences in age, level of education and residence; p(trend) * = p < .05, ** = p < .01 and *** = p < 0.001

3.7 Self-efficacy

Table 9 indicates declines in most indicators of self-efficacy during the study period. The percentage of MSM who would use a condom even after consuming drugs or alcohol decreased from 87% to 77% ($p < .01$). The percentage of MSM who would use condoms with a known partner decreased from 78% to 59% ($p < .001$), and condom use with lovers declined from 73% to 56% ($p < .001$). The proportion who would use a condom if they intend not to ejaculate inside their partner also decreased from 91% to 82% ($p < .01$). The only increase was in the number of MSM who would use condoms if practicing masturbation (23% to 57%; $p < .001$). It is important to note that decreased self-efficacy may be a contributing factor in the increased unprotected homosexual and bisexual activity in this time period. The 1999 DHS shows that only 17% of men used condoms in the last sexual relations, and over 40% believed that they were not at risk of contracting HIV/AIDS (INEC, 1999). The low risk perception among men in the general population may have been adopted by MSM.

3.8 Demonstration of Skills in Condom Use

Respondents in this study were asked if they would like to participate in demonstrating their condom use skills with an anatomical model. Table 10 presents results of only those who participated in the demonstration. Four skill components were examined: 1) opening the condom wrapper with fingers at the corner, 2) removing air by holding the condom at the tip with fingers, 3) rolling the condom completely to the base of the dildo, and 4) removing the condom from the dildo while holding the ring.

**Table 9: Trends in MSM's intended condom use with various partners
(adjusted percentages)†**

Indicators		Baseline 1997	Follow-up 2000	P(trend)
% who would use condoms if:				
Use drug or alcohol	%	87	77	.003**
	N	281	282	
Partner is known	%	78	59	.000***
	N	285	289	
Use condom with lover	%	73	56	.000***
	N	281	291	
Partner will not ejaculation inside	%	85	81	.277
	N	283	281	
I will not ejaculate inside	%	91	82	.007**
	N	285	283	
If practice masturbation	%	23	57	.000***
	N	284	277	

† Percentages are adjusted for sample differences in age, level of education and residence; p(trend) * = $p < .05$, ** = $p < .01$ and *** = $p < 0.001$

The findings suggest no significant improvements in the proportion of MSM who demonstrated two or more condom use skills during the study period (Table 10). Significantly more MSM correctly unrolled condoms over the entire dildo (78% to 94%, $p < .001$), but there was a significant decline in the proportion who correctly removed the condom from the dildo (87% to 72%, $p < .001$). The lack of improvement in skills may be due to the low condom use demonstration exercises among MSM. PASMO is the only organization that includes correct condom demonstrations in all activities with MSM.

Table 10: Trends in MSM's skills in condom use (adjusted percentages)†

Indicators		Baseline 1997	Follow-up 2000	P(trend)
MSM demonstrated how to use a condom				
Tear condom wrapper with fingers at the corner	%	67	73	.138
	N	269	280	
Hold the end of the condom with fingers	%	67	67	.973
	N	269	279	
Unroll the condom correctly to cover the entire dildo	%	78	94	.000***
	N	269	280	
Remove the condom from the dildo holding the ring	%	87	72	.000***
	N	269	280	
Correct demonstration of at least two skills of condom use	%	88	93	.094
	N	269	281	
Correct demonstration of at least three skills of condom use	%	67	71	.238
	N	269	281	
Correct demonstration of condom use (four basic skills)	%	46	43	.462
	N	269	281	

† Percentages are adjusted for sample differences in age, level of education and residence; p(trend) * = $p < .05$, ** = $p < .01$ and *** = $p < 0.001$

3.9 Participation in PASMO Activity and Skills Demonstration

The findings in this study suggest some association between skill development and participation in PASMO condom demonstration exercises. Table 11 shows that 88% of MSM who participated in a PASMO activity successfully demonstrated three basic skills of condom use compared to 72% of non-participants ($p < .05$). Eighty-eight percent of those who participated in PASMO activities correctly held the tip of the condom to remove excess air, compared to only 67% of non-participants ($p < .01$). These findings suggest the need to increase condom demonstrations to improve condom use skills among MSM.

Table 11: Percentage of MSM who participated in a PASMO activity by demonstration of correct use of condoms (2000)

Indicators	Participated in any PASMO activity			
		No	Yes	P-value
MSM demonstrated how to use condom				
Tear condom wrapper with fingers at the corner	%	74	80	.394
	N	243	40	
Hold the end of the condom with fingers	%	67	88	.010**
	N	242	40	
Unroll the condom correctly to cover the entire dildo	%	94	100	.106
	N	243	40	
Remove the condom from the dildo holding the ring	%	72	78	.502
	N	243	40	
Correct demonstration of at least two skills of condom use	%	94	98	.250
	N	243	40	
Correct demonstration of at least three skills of condom use	%	72	88	.038*
	N	243	40	
Correct demonstration of condom use (four basic skills)	%	44	60	.061
	N	243	40	

Note Chi Square statistics; * = $P < 0.05$, ** = $P < 0.01$ and *** = $p < 0.001$

3.10 Condom Use

Table 12 shows a significant decrease in the percentage of MSM who used condom in the last sex act. The percentage that used condoms in the last sex act with a stable male partner decreased from 79% to 37% ($p < .001$), and those who used condoms with sporadic male partners decreased from 85% to 54% ($p < .001$). Those who had used condoms with all male partners also decreased significantly from 69% to 22% ($p < .001$). These results with MSM reflect the increased risky sexual activity and the general lack of improvement in self-efficacy in the period of study.

Table 12: Trends in the percentage of MSM who used a condom in last sex act by type of partner (adjusted percentages)†

Indicators		Baseline 1997	Follow-up 2000	P(trend)
Used condoms in last sex act with:				
Stable male partner or lover	%	79	37	.000***
	N	296	297	
Sporadic male partner	%	85	54	.000***
	N	296	293	
All male partners	%	69	22	.000***
	N	296	297	
All partners (male and female)	%	24	25	.883
	N	296	297	

† Percentages are adjusted for sample differences in age, level of education and residence; p(trend) * = p < .05, ** = p < .01 and *** = p < 0.001

3.11 Knowledge and Use of Lubricants

The findings in Table 13 show that MSM's knowledge and use of lubricants decreased between 1997 and 2000. In 1997, 87% had heard of lubricants, compared to 80% in 2000 (p < .01). At the same time, the percentage who had ever used lubricant decreased from 81% to 52% (p < .001) and those currently using decreased from 61% to 30% (p < .001). Most HIV/AIDS programs in Nicaragua have not focused on increasing the demand and use of lubricants due to the low availability and high cost.

Table 13: Trends in MSM's knowledge and use of lubricants (adjusted percentages)†

Indicators		Baseline 1997	Follow-up 2000	P(trend)
Knows what a lubricant is	%	87	80	.029*
	N	296	296	
Ever used a lubricant	%	81	52	.000***
	N	296	295	
Currently using a lubricant	%	61	30	.000***
	N	293	295	

† Percentages are adjusted for sample differences in age, level of education and residence; p(trend) * = p < .05, ** = p < .01 and *** = p < 0.001

CHAPTER 4

COMMERCIAL SEX WORKERS

4.1 Characteristics of SWs

As Table 14 indicates, most of the SWs were in their 20's (54%) or late teens (25%) and had at least some primary school education (88%). While many were single (65%), 35% were either married or in a stable relationship. Only 15% of SWs had no children; 48% had one or two, and 37% had three or more. Sixty-six percent of the women interviewed had three or more dependents. Over half of the women interviewed (65%) charged less than \$10 per client, and 71% reported incomes of less than \$200 per month. This places SWs well below the Nicaraguan poverty level of \$400 per month (U.S. Department of Labor, 2000). Fifty-five percent defined themselves as SWs, while 14% referred to themselves as prostitutes and 30% gave a less common definition or had for definition of their profession.

4.2 Risky Sexual Activity

There was an increase from 4% to 9% ($p < .0001$) in the percentage of SWs who reported unprotected anal sex in the past 12 months but a decrease (10% to 8%) in the percentage that had had unprotected oral sex (Table 15). There was no significant change in the percentage of SWs who reported unprotected vaginal sex in the past 12 months. Table 16 shows an increased percentage of SWs who reported having had sexual relations exclusively with men, from 88% in 1997 to 95% in 2000 ($p < .01$).

Table 14: Demographic characteristics of sex workers in Nicaragua

	%
Age Group	
< 20	25
20 – 24	33
25 – 29	21
30 – 34	9
35 or more	13
Total (N)	400
Level of Education	
No education	13
Some primary/completed primary	37
Some secondary or more	51
Total (N)	401
Religion	
None	19
Catholic	59
Other Christians	21
Total (N)	401
Marital Status	
Not married	65
Married/living with partner	35
Total (N)	401
Number of Children	
None	15
Two or less	48
Three or more	37
Total (N)	401
Number of Dependents	
None	4
Two or less	31
Three or more	66
Total (N)	400
Estimated Income (per month in dollars)	
200 or less	71
201 – 400	22
401 or more	7
Total (N)	400
Average payment by client	
Less than 9 dollars	65
10 dollars or more	35
Total (N)	401
Self Definition of Work	
Others/Don't know	30
Women in prostitution/prostitute	14
Sex worker	55
Total (N)	342

Table 15: Trends in risky sexual activity of SWs (adjusted percentages)†

Indicators		Baseline 1997	Follow-up 2000	P(trend)
Had vaginal sex last month without condoms	%	37	44	.069
	N	283	397	
Had anal sex last month without condoms	%	4	9	.000***
	N	283	395	
Had oral sex last month without condoms	%	10	8	.000***
	N	282	397	

† Percentages are adjusted for sample differences in age, level of education and residence; p(trend) * = p < .05, ** = p < .01 and *** = p < 0.001

Table 16: Trends in the proportion of SWs who currently have sex with men (adjusted percentages)†

Indicators		Baseline 1997	Follow-up 2000	P(trend)
Currently have sex with men, women or both:				
Have sex with only men	%	88	95	.002**
	N	283	397	

† Percentages are adjusted for sample differences in age, level of education and residence; p(trend) * = p < .05, ** = p < .01 and *** = p < 0.001

4.3 Awareness and Knowledge of SWs about HIV/AIDS

4.3.1 Exposure to HIV/AIDS Information

Table 17 shows substantial increase in the percentage of SWs who received information about condoms through the mass media between 1997 and 2000. The percentage of SWs who saw condom ads on television increased from 18% to 85% (p < .001), and those who heard about them on the radio increased from 6% to 83%. Those who read about condoms in the newspapers increased from 10% to 66% (p < .001).

The percentage of SWs who heard about condoms from friends increased from 51% to 75% ($p < .001$) between 1997 and 2000, and from partner/lover, it increased from 9% to 46% ($p < .001$).

The percentage of SWs who heard about condoms from family members increased (17% to 29%, $p < .001$) as did the percentage who heard from church clergy (2% to 11%, $p < .001$).

Organizations working in AIDS prevention became less visible sources of condom information during the study period. Ninety-three percent of SWs heard about condoms through organizations for SWs in 1997 compared to 53% in 2000. Similarly, the percentage that heard about condoms at Ministry of Health workshops, NGO workshops, or by calling NGO AIDS hotlines decreased from 88% to 45% ($p < .001$), 44% to 30% ($p < .001$) and 16% to 6%, ($p < .001$), respectively.

4.3.2 SWs' Knowledge of the Advantages of Condoms

In general, findings suggest that the percentage of SWs who know reasons for condom use is declining. The percentage of SWs who used condoms to prevent AIDS decreased from 99% to 68% ($p < .001$) between 1997 and 2000. In the same period there was a decrease from 44% to 28% ($p < .001$) in the percentage who used condoms to prevent pregnancy. At the same time, the percentage that used them for hygiene increased from 2% to 17% ($p < .001$). HIV/AIDS prevention and condom use activities may not be appropriately targeting SWs especially the difficult to reach street workers.

**Table 17: Trends in SWs' exposure to information on HIV/AIDS
(adjusted percentages)†**

Indicators		Baseline	Follow-up	P(trend)
Have you received information about condoms from:		1997	2000	
TV	%	18	85	.000***
	N	283	397	
Radio	%	6	83	.000***
	N	282	397	
Newspapers	%	10	66	.000***
	N	282	391	
Pamphlets/posters	%	81	77	.163
	N	283	397	
Friends	%	51	75	.000***
	N	283	396	
Partner/lover	%	9	46	.000***
	N	281	397	
Family	%	17	29	.000***
	N	282	397	
Organizations for sex workers	%	93	56	.000***
	N	283	397	
Church/ministry	%	2	11	.000***
	N	280	396	
Workshop activity with MOH	%	88	45	.000***
	N	283	397	
Govt. phone line on AIDS	%	2	4	.210
	N	283	397	
NGO phone line on AIDS	%	16	6	.000***
	N	283	397	
NGO workshop on AIDS	%	44	30	.000***
	N	282	397	
Internet	%	-	4	
	N		400	

† Percentages are adjusted for sample differences in age, level of education and residence; p(trend) * = p < .05, ** = p < .01 and *** = p < 0.001

**Table 18: Trends in SWs' reasons for using condoms
(adjusted percentages)†**

Indicators		Baseline 1997	Follow-up 2000	P(trend)
Use condoms with clients:				
To prevent pregnancy	%	44	28	.000***
	N	282	390	
To prevent STDs	%	87	87	.943
	N	282	390	
To prevent AIDS	%	99	68	.000***
	N	282	390	
For hygiene	%	2	17	.000***
	N	282	389	
For other reasons	%	1	4	.075
	N	282	390	

† Percentages are adjusted for sample differences in age, level of education and residence; p(trend) * = p < .05, ** = p < .01 and *** = p < 0.001

4.4 Exposure to Social Marketing Programs

As Table 19 indicates, the majority of sex workers (89%) have been exposed to VIVE advertising. Seventy-six percent reported seeing the “bus” advertisement, 73% had seen the “tu eliges” spot, and 70% recalled hearing or seeing the “birthday” advertisement. Nearly two-thirds (65%) had seen or heard the “la seguridad tiene muchos nombres” campaign. This high awareness of VIVE advertising is consistent with the findings regarding increased exposure to condom information through the mass media.

Table 19: Percentage of SWs exposed to specific social marketing advertisements

Indicators		2000
Seen or heard advertisement on VIVE condom	%	89
	N	397
Have seen on TV advertisement about: The bus	%	76
	N	398
The birthday	%	70
	N	398
“Tu Eliges”	%	73
	N	398
“La seguridad tiene muchos nombres”	%	65
	N	398
Other commercials	%	7
	N	398

4.5 Participation in PASMO programs

Few SWs (14%) had participated in a PASMO activity (Table 20). Twelve percent had attended a condom skills demonstration, 11% had attended an AIDS prevention activity and 2% had attended a “Noches Vive.” Ten percent recalled seeing VIVE condom displays and 4% had seen the “VIVE Movil.” The low participation may be attributed to a lack of activity is specifically targeting SWs until recently.

Table 20: Percentage of SWs who participated in PASMO activities

Indicators		Follow-up 2000
Participation in PASMO Activities		
Any PASMO activities	%	14
	N	398
Prevention of AIDS	%	11
	N	356
To promote correct condom use	%	12
	N	398
Seen any VIVE condom displays	%	10
	N	398
Las “Noches VIVE”	%	2
	N	394
Seen VIVE Movil	%	4
	N	398
Other activities	%	1
	N	398

4.6 Condom Availability and Accessibility

4.6.1 SWs’ Usual and Preferred Sources of Condoms

Table 21 shows that between 1997 and 2000, private pharmacies became the main source of condoms for SWs (2% to 45%; $p < .001$), followed by health establishments (4% to 11%, $p < .001$). The proportion of SWs who buy condoms from bars or discos decreased from 23% to 4% ($p < .001$), those who buy from NGOs decreased from 32% to 6% ($p < .001$) and from business or brothels decreased from 39% to 22% ($p < .001$). An increasing proportion of SWs did not buy condoms at all (9% vs. 3% in 1997, $p < .001$).

The findings on SWs’ preferred sources of condoms are similar to those on actual sources.

Increased percentage of SWs preferred to buy condoms from the pharmacy (2% to 74%, $p <$

.001) and health establishment (4% to 5%, $p < .001$). SWs were less likely to prefer bar, disco, business or brothel as their source of condoms.

Table 21: Trends in SWs' reported availability and affordability of condoms (adjusted percentages)†

Indicators		Baseline 1997	Follow-up 2000	P(trend)
Usual Source of Condoms				
Private pharmacy	%	2	45	.000***
	N	280	384	
Health establishment	%	4	11	.001***
	N	280	384	
Bar or Disco	%	23	4	.000***
	N	280	384	
NGO	%	32	6	.000***
	N	280	384	
Business or brothel	%	39	22	.000***
	N	280	384	
Do not buy condoms	%	3	9	.000***
	N	280	384	
Preferred source of condoms is:				
Private pharmacy	%	2	74	.000***
	N	280	384	
Health establishment	%	4	5	.001***
	N	279	396	
Bar or disco	%	48	2	.000***
	N	279	396	
NGOs	%	7	7	.000***
	N	279	396	
Business or brothel	%	42	12	.000***
	N	279	396	
Condoms are expensive	%	1	15	.000***
	N	277	381	
Condoms are regular	%	10	15	.051
	N	277	381	
Condom are cheap	%	89	70	.000***
	N	277	381	

† Percentages are adjusted for sample differences in age, level of education, and residence; p(trend) * = $p < .05$, ** = $p < .01$ and *** = $p < 0.001$

4.6.2 SWs' Opinions about the Price of Condoms

More SWs now think that condoms are less affordable. In 1997, 1% considered them to be expensive, compared to 15% in 2000 ($p < .001$). The percentage who believed they are cheap decreased from 89% to 70% ($p < .001$) and the percentage who think the price is average increased from 10% to 15% ($p < .01$).

4.7 Self-efficacy

In general, indicators of self-efficacy declined during the study period. The findings in Table 22 show a decrease from 99% to 92% ($p < .001$) in the percentage of SWs who would use condoms while under the influence of drugs or alcohol. There was a drop from 94% to 71% ($p < .001$) in the percentage of SWs who would use condoms with regular clients and from 47% to 29% ($p < .001$) in the percentage who would use them with their husband or lover. Also, the proportion of SWs who would use condoms with clients who want to pay more for unprotected sex decreased from 99% to 75% ($p < .001$), and from 99% to 82% ($p < .001$) for clients who insist on not using condoms. The percentage of SWs who would insist on using condoms with healthy-looking clients also declined from 100% to 83% ($p < .001$). These findings corroborate the increased risky sexual activity in the same time period. The general decline in self-efficacy may be due to a change in the focus of targeting activities by NGOs from HIV/AIDS prevention to other health and economic needs.

**Table 22: Trends in SWs' intended condom use with various partners
(adjusted percentages)†**

Indicators		Baseline 1997	Follow-up 2000	P(trend)
% who would use condoms if:				
Used drugs or alcohol	%	99	92	.000***
	N	273	390	
Partner is regular client	%	94	71	.000***
	N	280	385	
Partner is husband or lover	%	47	29	.000***
	N	259	385	
Client pays more	%	99	75	.000***
	N	239	374	
Client insists	%	99	82	.000***
	N	276	379	
Client looks healthy	%	100	83	.000***
	N	277	354	

† Percentages are adjusted for sample differences in age, level of education and residence; p(trend) * = $p < .05$, ** = $p < .01$ and *** = $p < 0.001$

4.8 SWs' Skills in Condom Usage

Between 1997 and 2000, SW's condom use skills declined considerably. As Table 23 shows, the percentage of SWs who correctly opened the condom wrapper from the corner decreased from 78% to 58% ($p < .001$). The percentage of those who unrolled the condom correctly to cover the entire dildo declined from 91% to 86% ($p < .05$). The percentage of SWs that correctly removed the condom while holding the ring decreased from 85% to 75%, and the percentage of SWs who demonstrated two and three condom use skills decreased from 97% to 88% ($p < .001$) and 88% to 71% ($p < .001$) respectively.

Table 23: Trends in SWs' skills demonstration of correct condom use (adjusted percentages)†

Indicators		Baseline 1997	Follow-up 2000	P(trend)
SWs who demonstrated how to use condoms				
Tear condom wrapper with finger at the corner	%	78	58	.000***
	N	258	271	
Hold the end of the condom with her finger	%	73	79	.114
	N	258	271	
Unroll the condom correctly to cover the entire dildo	%	91	86	.094*
	N	258	271	
Remove the condom from the dildo holding the ring	%	85	75	.005***
	N	258	271	
Correct demonstration of at least two skills of condom use	%	97	88	.000***
	N	258	272	
Correct demonstration of at least three skills of condom use	%	88	71	.000***
	N	258	272	
Correct demonstration of condom use (four basic skills)	%	42	40	.765
	N	258	272	

† Percentages are adjusted for sample differences in age, level of education and residence; p(trend) * = p < .05, ** = p < .01 and *** = p < 0.001; the Ns in this table are SWs who participated in condom demonstration.

4.9 Condom Demonstrations and Use

There was no significant association between levels of condom use skills and participation in a PASMO activity (Table 24). This may be because PASMO only recently became directly involved with SWs. Low correct condom use skills may also be due to a lack of involvement of partner NGOs in condom demonstration activities.

Table 24: Percentage of SWs who participated in a PASMO activity by Demonstration of correct use of condoms (2000)

Indicators	Participated in any PASMO activity			
	No	Yes	P-value	
SWs who demonstrated how to use condoms				
Tear condom wrapper with fingers at the corner	% N	60 230	52 44	.369
Hold the end of the condom with fingers	% N	79 230	89 44	.144
Unroll the condom correctly to cover the entire dildo	% N	87 230	91 44	.424
Remove the condom from the dildo holding the ring	% N	74 230	84 44	.150
Correct demonstration of at least two skills of condom use	% N	89 231	93 44	.421
Correct demonstration of at least three skills of condom use	% N	72 231	82 44	.170
Correct demonstration of condom use (four basic skills)	% N	41 231	43 44	.800

Note Chi Square statistics; * = $P < 0.05$, ** = $P < 0.01$ and *** = $p < 0.001$

4.10 Condom Use

As Table 25 shows, the percentage of SWs who used condoms with all clients in their last sex act declined from 76% to 66% ($p < .01$). Over 90% used condoms in their last sex act with regular and sporadic clients with no significant change between 1997 and 2000. There were no significant changes in the low use of condoms in the last sex acts with spouses or free union partners. These findings reveal a gap in SWs' ability to consistently use condoms with all partners.

Table 25: Trends in SWs' condom use in the last sex act by partner types (adjusted percentages)†

Indicators		Baseline 1997	Follow-up 2000	P(trend)
Use condoms in last sex act with:				
Regular client	%	95	92	.240
	N	232	325	
Sporadic client	%	98	95	.052
	N	279	369	
Spouse or free union	%	21	16	.350
	N	87	229	
All clients in last sex act	%	76	66	.011**
	N	283	396	

† Percentages are adjusted for sample differences in age, level of education and residence; p(trend) * = p < .05, ** = p < .01 and p < 0.001

4.11 Knowledge and Use of Lubricants

The findings in Table 26 show a decline from 70% to 57% (p < .001) in the percentage of SWs who know about lubricants. There was no significant change among SWs who ever used or were currently using lubricants.

Table 26: Trends in indicators of lubricants (adjusted percentages)†

Indicators		Baseline 1997	Follow-up 2000	P(trend)
Knows what a lubricant is	%	70	57	.000***
	N	283	397	
Ever used a lubricant	%	28	31	.331
	N	283	397	
Currently using a lubricant	%	9	5	.098
	N	283	397	

† Percentages are adjusted for sample differences in age, level of education and residence; p(trend) * = p < .05, ** = p < .01 and *** = p < 0.001

CHAPTER 5

CONCLUSIONS AND PROGRAM IMPLICATIONS

5.1 Men who have Sex with Men

- The findings suggest an increase in risky sexual activity among MSM both in homosexual and heterosexual relationships. This trend may facilitate the spread of HIV/AIDS to the general population. Efforts made to sensitize MSM on the severity of HIV/AIDS may help to stop its spread.
- The main sources of information on condoms for MSM changed from interpersonal communication to the mass media (TV and radio). The implication of this change is not clear but since self-efficacy also declined during the study period, programs that use interpersonal communication to strengthen the self-efficacy of MSM may increase consistent condom use among them.
- Knowledge of the benefits of condoms increased during the study period but this did not translate to an increase in self-efficacy or consistent condom use among MSM. This casts doubts on the quality of the knowledge that MSM claim to have. Program interventions may be more effective if behavior change messages on the benefits of using condoms are designed to portray a condom as a device for saving life. It may also be effective to provide these messages through multiple communication channels.
- Overall, there was no significant improvement in condom use skills. MSM who participated in a PASMO activity were more likely to demonstrate correct condom use. This implies that

programs that increase demonstration skills may help ensure correct condom use among MSM.

- Decreased condom use with all partners in the last sex act reflects the increased risky sexual activity and decreased self-efficacy to use condoms during the study period. Specific programs need to be designed to increase self-efficacy and consistent condom use among MSM. Increasing the quality and quantity of the interpersonal communications targeting MSM may prove effective in changing their behavior.
- The findings suggest an increased affordability and accessibility of condoms during the study period. MSM buy condoms where they would prefer to buy them and they think that condoms are cheap at the current price. Increased accessibility and visibility of condoms may increase use of condoms by MSM.

5.2 Sex Workers

- Despite significant increases in the percentage of SWs exposed to information about condoms, risky sexual activity increased during the study period. Increased risky sexual activity may increase the rate of HIV/AIDS transmission among SWs and the general population.
- In general, SWs' knowledge on the benefits of condoms declined during the study period, even as media exposure to information on condoms increased. Program interventions that improve the quality of information on how HIV is contracted and the modes of transmission may increase the number of SWs who consistently use condoms with all partners. Since the

majority of SWs are street workers, programming should address their needs with special attention to the environments within which they work.

- SWs' perceived ability to use condoms with partners declined during the study period. The findings also show that some indicators of self-efficacy remained fairly high while others remained low. In order to ensure consistent condom use among SWs, all indicators of self-efficacy must be high. Program interventions that educate SWs on the risk of contracting HIV using interpersonal activities, emphasizing self-esteem, negotiation skills and role playing may improve their ability to consistently use condoms with all partners.
- SWs' condom use skills did not improve during the study period. Fewer women were able to demonstrate correct condom use skills. This may be due to a lack of demonstration activities that specifically target SWs. Programs that teach SWs how to use condom correctly may help to reduce unsafe sex among them. In order to internalize condom use, programs may need to engage SWs in repeated demonstration of condom use skills.
- The findings suggest that SWs buy condoms at their preferred outlets. Programs that strengthen the provision of condoms in pharmacies and brothels while ensuring its availability in other non-traditional outlets may improve SWs' access to condoms.

REFERENCES

Instituto Nacional de Estadísticas y Censos (INEC). (1999). Encuesta Nicaraguense de Demografía y Salud 1998. Ministry de Salud, Managua, Nicaragua/Macro International Inc. Calverton, Maryland, USA.

Latin American and Caribbean Epidemiological Network et al. (LACEN). (November 2000). HIV and AIDS in the Americas: An Epidemic with Many Faces. [On-line]. Available: <http://www.census.gov>.

Proyecto Acción SIDA de Centroamérica (PASCA). (1999). Análisis de la situación de Nicaragua. [On-line]. Available: <http://www.pasca.org>.

UNAIDS. (2000). Epidemiological Fact Sheet: Nicaragua. [On-line]. Available: <http://www.unaids.org>.

UNAIDS. (2000b). "Table of country-specific HIV/AIDS estimates and data." Report on the global HIV/AIDS epidemic - June 2000. [On-line]. Available: http://www.unaids.org/epidemic_update.

U.S. Census Bureau. (June 2000). "HIV/AIDS Profile: Nicaragua". International Data Base. [On-line]. Available: <http://www.census.gov>.

U.S. Census Bureau (2000b). "IDB Summary Demographic Data for Nicaragua." International Data Base. [On-line]. Available: <http://www.census.gov>.

U.S. Department of Labor: Bureau of International Labor Affairs. (February 2000). Wages, Benefits, Poverty Line, and Meeting Workers' Needs in the Apparel and Footwear Industries of Selected Countries. p. I-47. [On-line]. Available: <http://www.dol.gov>.