

The South Beach Health Survey:

Human Immunodeficiency Virus (HIV) Infection and Risky
Sexual Behaviors among Men who have Sex with Men

-- Final Report --

For the Dade County HIV/AIDS Prevention Community
Planning Group, Florida Department of Health,
and Health Council of South Florida

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Abstract

Objectives: Recent studies have suggested an increase in human immunodeficiency virus (HIV) infection and associated sexual risk-taking behaviors among men who have sex with men (MSM), especially younger MSM. This study was designed to help the HIV-prevention community-planning process by obtaining population-based data on the impact of the HIV epidemic on MSM in "South Beach," a four census-tract area of Miami Beach, Florida, and by comparing HIV prevalence and sexual risk-taking behaviors between younger (18 to 29 years old) and older (30 years and older) MSM living in South Beach.

Methods: A cross-sectional survey of unmarried men 18 years of age and older who reported ever having sex with another man was conducted using a multistage probability sampling scheme. Eligible residents were interviewed face-to-face and also asked to complete a self-administered questionnaire. Specimens of oral mucosal transudate were collected and tested by a modified enzyme linked immunosorbent assay (ELISA) for antibody to HIV-1, the virus that causes AIDS.

Results: Fifty-one of 205 MSM (24.9%) tested positive for antibody to HIV-1. Men 30 years of age and older (34.3% HIV-1 antibody positive) were more likely to be infected than younger men (15% HIV-1 antibody positive). Almost all (95.6%) had been counseled and tested for HIV at least once. Just over three-quarters (77.1%) said they had engaged in anal intercourse during the past year; 92 respondents (45.0%) admitted that they had unprotected anal intercourse in the past year. Just over one-quarter (25.5%) of those testing HIV-1 antibody positive in our survey thought they were HIV-1 antibody negative at time of interview. HIV-positive men who knew they were infected were just as likely to engage in unsafe sex as HIV-infected men who didn't know their status or thought they were uninfected.

Conclusion: Counseling and testing (C&T) serves to refer HIV-infected MSM to medical treatment, but C&T seems to be having minimal impact on the sexual behavior patterns of HIV-infected men. HIV-infected men continue to engage in oral and anal sexual activities; sometimes these sexual activities are unprotected and could lead to HIV transmission. Social interventions directed at changing social norms in South Beach will be required to promote more wide-scale commitments to safer sex and HIV prevention.

Introduction

Several studies conducted within the past decade have found that younger homosexual and bisexual (gay) men report higher behavioral risk for human immunodeficiency virus (HIV) infection than do older gay men, and that a new generation of men who have sex with men (MSM) is becoming infected with HIV [1-6]. For example, the San Francisco Young Men's Health Study in their population-based household sample of 1992-1993 found nearly one in five MSM (17.6%) between the ages of 18 and 29 years old to be infected with HIV; seroprevalence and accumulated risk for HIV infection increased with age [1]. Seroprevalence of HIV infection among 425 homosexual and bisexual men ages 17 to 22 sampled from 26 public venues in the San Francisco Bay area in 1992-1993 was found to be 9.4%; 70% of those infected with HIV did not know their serostatus at the time of interview [2]. In a third cross-sectional survey of homosexual and bisexual men conducted in San Francisco in 1989, those under the age of 30 reported greater risk behavior for HIV infection than did those 30 years of age or older, and the circumstances and reasons for taking such risks were different for younger and older MSM [3]. Gay men between the ages of 18 and 25 in three medium-sized West Coast communities perceived the likelihood of acquiring HIV from unprotected anal intercourse with a young gay man to be significantly lower than with an older gay man [4]. A prospective study with a convenience sample of 87 gay men 18 to 24 years old enrolled in New York City in 1990 showed that eight (9%) were infected with HIV at baseline, one of 57 (2%) seroconverted one year later, and--although tested and informed of their serostatus--participants reported more unprotected sexual episodes and more partners at follow-up than at baseline [5].

The 1994 Annual Report from the Department of Health and Rehabilitative Services (DHRS) on Vital and Morbidity Statistics for Dade County (Florida) documents reported AIDS cases by zip code [7]. Cumulative AIDS cases (1981-1994) for zip code 33139 (South Beach), a section of Miami Beach, Florida, was found to be in the highest category for AIDS (701+) cases reported along with only two other zip codes in Miami: 33142 and 33147. AIDS cases among adult and adolescent males by exposure category indicates that 78% of non-Hispanic white and 72% of Hispanic AIDS cases were among MSM in Dade County, compared with 19% of the AIDS cases reported for non-Hispanic Black men. AIDS cases among non-Hispanic white and Hispanic MSM were concentrated in zip code 33139; AIDS cases among non-Hispanic Black men, few of whom appeared to be MSM, were concentrated in the other two zip codes (33142 and 33147) [7]. In addition, U.S. Census data for 1990 showed a clustering of unmarried men in South Beach (zip code 33139), suggesting that HIV research and prevention efforts for MSM in Miami should focus on the population living in South Beach.

HIV-antibody counseling and testing (C&T), one of the cornerstones of the national prevention strategy for HIV, has been used as a prevention tool to help people assess their risks, encourage or reinforce behavior change, and refer infected individuals for clinical care. Despite the large economic and human service investment in C&T, studies suggest that standard HIV testing and counseling does not result in the elimination of high-risk sexual behaviors among homosexual men [8]. MSM continue to engage in sexual practices that could transmit the virus that causes AIDS.

The relationship between risk perceptions of personal susceptibility and severity of HIV disease and risky behaviors (or behavior change) is not clear nor conclusive. Such research

suggests that perceived susceptibility and severity may have a primary effect on the initiation of behavior change rather than on the continuation or maintenance of safer sex behaviors [9,10].

For many homosexual and bisexual men, problems in adopting and maintaining safer sex practices arise because the value of self-protection often conflicts with interpersonal pressures and sentiments. Nevertheless, a strong correlation between self-efficacy for condom use and consistently using condoms has been reported for gay men [11].

Although the problem of HIV disease among MSM appears to be concentrated in South Beach, no study of HIV infection among MSM had been conducted in Miami Beach before the Centers for Disease Control and Prevention (CDC) selected sites in Miami in 1995 to be added to their Young Men's Study (YMS) [12]. The YMS systematically samples young men in public venues, but it is not intended to be a study of all young MSM who live in South Beach. Only one study with a representative sample of young MSM living in a residential area has been conducted in the United States: the San Francisco Young Men's Health Study (SFYMHS) [1]. Therefore, an epidemiological study to investigate differences with respect to HIV-1 infection and sexual risk-taking between younger and older MSM living in South Beach was proposed by graduate students, faculty members, and staff in the Department of Public Health at Florida International University (FIU)..

Purpose

The South Beach Health Survey was designed and conducted to help the Dade County HIV/AIDS Prevention Community Planning Group (DCPG), the Florida Department of Health, and AIDS Services Organizations (ASOs) in South Florida plan and carry out more effective HIV prevention programs. Objectives were to: (1) estimate the proportion of MSM who *believe*

that they are infected with HIV and the proportion who *have evidence of HIV-1 infection by HIV-antibody test*; (2) assess the *role of C&T and other prevention strategies* in promoting risk reduction, and (3) describe the potential *impact of innovative interventions* for MSM who continue to engage in behaviors that could lead to HIV infection and the transmission of the virus that causes AIDS.

Theoretical Considerations

Psychosocial theories and concepts were used to guide the development of our research questions. Among the conceptual schemes we considered were the Health Belief Model, the Theory of Reasoned Action, and an hypothesized notion of “AIDS Inevitability” among uninfected MSM.

The *Health Belief Model* (HBM) is a psychosocial model that originated in the U.S. Public Health Service (PHS) during the 1950s to explain self-protective health behaviors. The HBM has been used extensively to predict a variety of health-related behaviors, from acceptance of poliomyelitis vaccines to routine visits to dentists' offices for check-ups. Critical components of the HBM are: (1) perceived susceptibility (one's subjective perception of the risk of contracting a disease or medical problem), (2) perceived seriousness (one's feelings regarding the consequences of developing an illness or biomedical condition), (3) perceived benefits (one's beliefs regarding the effectiveness of the various available actions to reduce the threat of infection), (4) perceived barriers (one's assessment of the potential negative aspects of a particular health action that may impede the undertaking of a recommended course of action), and (5) self-efficacy (one's conviction that he or she can successfully execute the behavior or behaviors required to produce the desired outcome) [13].

Ajzen and Fishbein's *Theory of Reasoned Action* (TRA) posits that behavioral intention is the immediate determinant of health-related and other behaviors. All other factors that influence behavior are mediated through intention. Behavioral intention is a function of two factors: one's attitude toward a specific behavior and one's perception of the social norms (or the social environment) that govern the enactment of a behavior. In turn, perceptions of social norms are determined by a person's normative belief about what significant others (such as peers) think he should do and by one's motivation to comply with the wishes of his peers [13].

Odets' notion of "*AIDS inevitability*" can be described as a pervasive feeling of destiny among MSM who have survived the HIV epidemic. More specifically, many men may know they are uninfected at the moment, but feel like they are--or believe they will soon become--infected with HIV. This feeling of AIDS inevitability is accompanied by unprecedented levels of depression and despair among gay men. Odets' hypotheses that feelings of deep and profound loss due to the suffering and deaths of loved ones, anger, isolation, and hopelessness are just some of the contributing sources of depression and despair for MSM living in the age of AIDS [14].

Methods

The South Beach Health Survey was designed to be a cross-sectional study of unmarried men 18 years of age or older who reported ever having had sex with a man and who had been residents of an area called "South Beach" (operationally defined as census tracts 42, 43, 44, and 45 of Miami Beach, Florida) for at least 30 days. For the purposes of determining eligibility to participate in this study, "ever having had sex with a man" meant that the eligible resident or his male partner ejaculated while engaging in close, interpersonal (sexual) activities at some time

during the participant's lifetime. Participants were recruited from the defined South Beach area by means of a three-stage probability sampling scheme.

The study design was modeled after the SFYMHS, a multistage probability sample of households in a 21 census-tract area of San Francisco. The South Beach area included in our survey was roughly equivalent to zip code 33139, excluding the Venetian Isles (Belle, Revo Alto, Dilido, San Marino, San Marco, and Biscayne), Hibiscus Island, and Star Island.

Sample

A three-stage sampling design was used to identify potential respondents in South Beach. Residential addresses (i.e., single-family homes, apartment and condominium buildings) were selected; then, residential units were identified, and, finally, eligible individuals living in residential units were asked to participate. The *U.S. Census of Population and Housing* for 1990 showed 36,404 people living in the four census tracts (42, 43, 44 and 45) of interest [15].

Of the total population, 3,782 were men between the ages of 18 and 29. Adjusting for the increase in overall population size to an estimated 39,467 in 1995, the total subpopulation of men between the ages of 18 to 29 in census tracts 42, 43, 44 and 45 for 1995 was thought to be approximately 4,500 (see Footnote 1) [16]. Although the number of unmarried men 18 to 29 who have sex with men was unknown, the proportions who were unmarried were: 80% (1,069) in census tract 42, 78% (1,089) in census tract 43, 85% (1,301) in census tract 44, and 87% (192) in census tract 45. Thus, we estimated that approximately 3,650 men between the ages of 18 and 29 could have been eligible for participation in this study if all were MSM (see Footnote 2).

With respect to those 30 years and older, the proportion who were unmarried were: 58.0% (2,863) in census tract 42, 58% (1,836) in census tract 43, 61% (3,036) in census tract 44,

and 62% (696) in census tract 45. Thus, about 8,431 men 30 years of age and older could have been eligible for participation in our study if all were MSM (see Footnote 2).

We assumed that our household unit sample would consist of approximately 20% of the South Beach population; thus, approximately 2,416 of the 12,081 unmarried males 18 years of age and older could have been in our target population if they met other eligibility criteria. Therefore, we set out to select at random unmarried MSM 18 years of age and older living in census tracts 42-45 using a multistage sampling procedure.

Sampling Procedures

The Dade County Property Appraisal Department listed all existing subdivisions within Miami Beach in the *Subdivision Folio Blue Book*. The number 02 preceding a two-part, seven-digit identification number (i.e., 02-xxxx-xxx) defined that subdivision to be in Miami Beach. Since Miami Beach also consisted of census tracts 39.01, 39.04, 39.05, 39.06, 40, 41.01, 41.02 and 45.99, the 02 (Miami Beach) identification number could have been a subdivision within one of the areas outside South Beach; therefore, the list of 02 subdivisions was reviewed to identify and record addresses which fell within the four census tracts (42, 43, 44 and 45) of South Beach.

A list of all subdivisions within census tracts 42, 43, 44 and 45 of Miami Beach (code 02) was compiled. Each of the subdivisions within South Beach was entered into the Dade County Property Appraisal Department office computer. Each subdivision number retrieved all possible residential addresses within that specific subdivision. This procedure was followed until all subdivisions and addresses in South Beach were entered.

Stage 1. Residential Address Probability Sample: Using a systematic sampling method with a random seed, every fifth residential address was chosen for visitation (see Footnote 3).

Stage 2. Residential Unit Probability Sample: Using a systematic random-sampling technique, 20 % of condominium units, 20 % of multi-family apartment units, and all single-family homes (which made up less than 5 % of the entire sample) were visited.

Stage 3. Eligible Resident Probability Sample: If more than one man living within each residential unit qualified, MSM with odd-numbered birthdays contacted on odd-numbered days and MSM with even-numbered birthdays contacted on even-numbered days were invited to participate. For example, if two or more eligible residents of a randomly selected unit were contacted on the 12th day of a month, only those with even-numbered birthdays were asked to enroll. By following these procedures, we expected to make contact with 305 unmarried MSM 18 years of age and older who had lived in South Beach for at least one month. A sample of 305 eligible residents was expected to yield an approximate effective sample size of 205 participants.

Informed Consent

Written, informed consent was obtained from everyone who agreed to participate, but study participants were not asked to sign their names to participant consent forms. Information about the purposes of the study, extent and nature of participation, unavailability of HIV-antibody test results, risks and benefits to participants, aggregation in the reporting of results, and right of withdrawal were made clear to all eligible respondents at the outset.

Specimens and HIV-Antibody Tests

Participants were asked to provide a specimen of oral mucosal transudate for HIV-1 antibody testing. Oral fluids were collected with the OraSure HIV-1 oral specimen collection

device manufactured by Epitepe, Inc., of Beaverton, Oregon. Mucosal transudate, the fluid derived from the passive transport of serum components through the oral mucosa into the mouth, contains immunoglobulins (antibodies). The OraSure device consisted of an absorbent cotton fiber pad, impregnated with a proprietary mixture of common salts and gelatin, affixed to a nylon stick. The device was placed by the participant between the lower cheek and gum, rubbed gently along the tooth-gum margin 20 times, and then kept there for two minutes to enhance the flow of mucosal transudate across the mucosal surfaces and onto the absorptive cotton fibers of the pad. The pad was then removed from this position and placed in a transporting device [17]. The placement of the pad in the transporting vial by a participant concluded the specimen gathering procedure.

Vials containing specimens were mailed to a certified state public health laboratory in Jacksonville, Florida, for modified enzyme linked immunosorbent assay (ELISA) testing. ELISA-positive specimens collected after June 13, 1996, were confirmed by Western blot methods. Just under half (45%) of the specimens for the study had been collected and tested when the Western blot became available in July 1996.

Questionnaire and test results were linked by common identification numbers, but neither was linked to any personal identifying information. Test results were for study purposes only. Test results were not available to participants of the study.

Testing for HIV-1 antibody in oral fluids by modified ELISA, confirmed by Western blot, has been shown to have a high degree of sensitivity, specificity, and predictive value [17-20]. For example, Emmons and colleagues used the OraSure oral fluids collection device and reported 100% sensitivity, 100% specificity, and 100% positive and negative predictive values

when their specimens were tested with a modified conventional serum anti-HIV-1 ELISA [17]. Gallo and colleagues used enzyme immunoassay screening and Western blot confirmatory testing of 673 true-positive subjects; they showed a sensitivity of 99.9% and positive predictive value of 100%, respectively [20]. During the course of our study, the Food and Drug Administration (FDA) approved the OraSure collection device and modified ELISA testing procedure for general use in the United States.

Personal Interviews

Participants were interviewed for their (1) sociodemographic characteristics, (2) patterns of geographic mobility and participation in social activities, (3) patterns of sexual, alcohol, and drug-using behavior, (4) knowledge of risk factors for HIV infection and experience with other STDs, (5) self-perceptions of health, (6) histories of HIV-antibody testing, (7) health beliefs, (8) commitments to safer sex, and (9) self-reports of attempts to prevent HIV infection or transmission. Personal interviews were conducted in private by members of the study team (graduate students from FIU). Sexual risk behavior and other especially sensitive questions (approximately half of all questions) were answered on a self-administered questionnaire, not during personal interviews.

Participants were instructed not to give their surnames or any other personal identifying information. They were not to write their names on the self-administered questionnaire or the return envelope. Participants were provided with a pre-stamped envelope addressed to the Department of Public Health at FIU to return self-administered questionnaires after completion.

Test Results

No results of HIV-antibody testing were made available to study participants. There was

no way of linking test results to individual participants in this study. Test results were matched with interview and self-administered questionnaire responses by a study identification number written on each page of each questionnaire and on the laboratory specimen slip.

Data Management

Data collected during interviews were recorded on a questionnaire. The second half of the questionnaire was completed through self-report by the participant and returned in a separate envelope to the Department of Public Health at FIU. Specimens were labeled for linkage with the questionnaire, dated, and sent to a certified state health department laboratory for HIV-1 antibody testing. Test results were recorded in a computerized password protected database. Test results were linked with responses to survey questions by a unique number, but that number was not linked to individual participants. When research forms were received at FIU, they were compiled, reviewed for consistency, and coded for data processing.

Protection Of Human Subjects

The only significant risk of participation in our study was breach of confidentiality. Confidentiality was protected by utilizing unsigned, but witnessed, consent forms. Consent forms were only available in English. A member of the study staff certified that the participant had read the consent form and had agreed to participate in the research study. Before data collection began, the research protocol, consent form, and study procedures were approved by the University Research Council (URC) at FIU, an NIH-approved human subjects review committee.

Analysis

Data were analyzed at FIU with the assistance of standard statistical programs available

in the Statistical Package for Social Sciences (SPSS) and data-processing equipment.

Results

Between January 20 and December 19, 1996, 2,622 individuals residing in South Beach were contacted. These personal contacts resulted in the identification of 226 (8.7%) eligible MSM 18 years of age and older. Two-hundred five (90.7%) of the 226 eligible men gave informed consent to participate and completed study procedures. Fourteen (6.4%) qualified, but refused to participate. Seven others (2.9%) qualified and agreed to participate, but we were unable to enroll, interview, and test them before data collection was terminated.

Of 219 MSM identified and screened, 106 were 18 to 29 years of age and 113 men were 30 years or older. Overall, 51 (24.9%) of the 205 men enrolled and tested in the study were HIV-1 antibody positive. Fifteen (15.0%) of the 100 men 18 to 29 years old and 36 (34.3%) of the 105 men 30 years and older were infected with the virus that causes AIDS.

Sociodemographic Characteristics

Of the 205 MSM interviewed, 181 (88.3%) identified themselves as homosexual or "gay," 18 (8.8%) as bisexual, four (2.0%) as heterosexual, and two as other (1.0%). One-hundred ten (53.7%) said they were white (Caucasian), 76 (37.1%) said they were Hispanic, Latino, or of Spanish origin, 12 (5.9%) said they were Black or African-American, and seven (3.3%) said they were Asian, Native American, Pacific Islander or other. The average (mean) age for participants in our survey was 32.4 years (sd=6.7).

Average (mean) annual income was \$40,000 (sd=\$33,100). One-hundred thirty-five (65.9%) said they had earned a four-year college degree. Sixteen (7.8%) were born in Florida. A breakdown by age group (18-29 years of age and 30 years of age and older) of the

characteristics of study participants (frequency distributions) is provided in the Appendix.

Geographic Mobility and Social Activities

The average (mean) number of years living in South Beach was 2.7 years (sd=2.4). Fifty-nine (28.8%) said they had been living in South Beach for less than one year; 129 (62.9%) for less than three years. The average (mean) number of times a participant had moved in the past five years was 2.1 (sd=1.9). One-hundred seventy-one (83.4%) had moved at least once in the past five years; 64 (31.2%) had moved three or more times, not including moves within South Beach. During the past five years, 68 (33.2%) had moved only once, and that move was to South Beach.

During the 12 months preceding interview, 96 (46.8%) of the 205 MSM surveyed had frequented gay bars and nightclubs in South Beach at least once a week; 50 (24.4%) did so two or more times a week. About half of all respondents (48.8%) said they had visited parks, beaches, public restrooms, bookstores, and other cruising places at least once a month during the past year in order to meet sex partners.

Sexual, Alcohol, and Drug-Using Behaviors

Almost half (49.3%) of the 205 men surveyed reported having sexual intercourse (oral or anal) with another man or boy before the age of 17 years. Thirteen (6.3%) said they were forced to have oral or anal sexual intercourse during their first experience. One-hundred eighteen men (58.7%) had 50 or more (male) lifetime sex partners (oral and/or anal); 74 (36.8%) reported having 100 or more partners. Twenty-four (11.7%) had engaged in oral, vaginal, or anal intercourse with a woman.

A primary male partner was reported by 83 (40.5%) of the 205 MSM surveyed; 46

(54.1%) of the 83 with primary partners said neither they nor their partner had sex outside their relationship. Nearly all men surveyed (93.7%) engaged in oral intercourse during the past year (Table 1a). Over three-quarters (77.1%) said they had engaged in anal intercourse (Table 1b).

	N=205		18-29 Years		30 Years or older	
Sexual Relationships	n	(%)	n	(%)	n	(%)
None	13	(6.3)	7	(7.0)	6	(5.7)
Primary partner only	23	(11.2)	10	(10.0)	13	(12.4)
Other partners only	110	(53.7)	51	(51.0)	59	(56.2)
Primary partner and other partners	59	(28.8)	32	(32.0)	27	(25.7)
Any oral intercourse	192	(93.7)	93	(93.0)	99	(94.3)

			18-29 Years		30 Years or older	
Sexual Relationships	n	(%)	n	(%)	n	(%)
None	47	(22.9)	19	(19.0)	28	(26.7)
Primary partner only	29	(14.1)	12	(12.0)	17	(16.2)
Other partners only	90	(43.9)	49	(49.0)	41	(39.0)
Primary partner and other partners	39	(19.0)	20	(20.0)	19	(18.1)
Any anal intercourse	158	(77.1)	81	(81.0)	77	(73.3)

During the past year, just under half of those surveyed said they drank alcohol at least once a week (Table 2). Ecstasy and cocaine were used in the past year by at least 40% of respondents (Tables 3a, 3b, and 3c). Just over half of the men surveyed (51.5%) said they had been high on alcohol or drugs while having anal intercourse with a man during the 12 months preceding interview. Seventeen (8.3%) had used injectable steroids or hormones during the past

year. Seven (3.4%) had injected recreational drugs into their veins or under their skin at least once during their lifetimes, but no one said he had shared needles during the past year (Table 3d).

	18 years and older		18 to 29 Years		30 Years and Older	
	n	%	n	%	n	%
Everyday or Nearly Everyday	15	7.3	3	3.0	12	11.4
1 to 4 Times Per Week	94	45.8	50	50.0	44	41.9
1 to 3 Times Per Month	47	22.9	25	25.0	22	21.0
Eleven or Fewer Times Per Year	49	23.9	22	22.0	27	25.7
	205	100	100	100	105	100

	<i>N=205</i>		<i>Frequency of Use</i>			
	<i>N</i>	<i>%</i>	<i>Daily (%)</i>	<i>Weekly (%)</i>	<i>Monthly (%)</i>	<i>Less Often (%)</i>
<i>Marijuana or Hashish</i>	112	54.6	20.0	20.9	17.3	41.8
<i>Nitrate Inhalants ("Poppers")</i>	75	36.6	1.4	12.2	18.9	67.5
<i>Ecstasy</i>	86	42.2	1.2	8.2	25.9	64.7
<i>Amphetamines ("Uppers")</i>	46	22.4	6.5	13.0	15.2	65.2
<i>Special K</i>	66	32.2	3.1	12.3	20.0	64.6
<i>Crack</i>	4	2.0	0.0	33.3	33.3	33.3
<i>Cocaine</i>	82	40.0	1.2	11.1	29.6	58.0
<i>Other Drugs</i>	35	17.1	0.0	2.9	14.3	82.8
	205	100				

Knowledge of Risks

Of the 205 MSM surveyed, 188 (94.5%) felt that HIV infection and AIDS were not

problems limited to mostly older homosexual and bisexual men, but only 64 (32.2%) said they were problems for both older and younger MSM. One-hundred ninety-seven respondents (96.1%) said they knew at least one person who was HIV-positive; 132 (64.4%) knew six or more people living with AIDS or HIV disease. Over half of all respondents (54.1%) believed that

	<i>N=100</i>		<i>Frequency of Use</i>			
	<i>N</i>	<i>%</i>	<i>Daily (%)</i>	<i>Weekly (%)</i>	<i>Monthly (%)</i>	<i>Less Often (%)</i>
<i>Marijuana or Hashish</i>	58	58.0	19.3	26.3	15.8	38.6
<i>"Poppers"/Nitrate Inhalants</i>	37	37.0	0.0	16.2	16.2	67.6
<i>Ecstasy</i>	51	51.0	2.0	11.8	23.5	62.7
<i>"Uppers" (Amphetamines)</i>	29	29.0	6.9	17.2	13.8	62.1
<i>Special K</i>	37	37.0	5.4	10.8	18.9	64.9
<i>Crack</i>	2	2.0	0.0	50.0	0.0	50.0
<i>Cocaine</i>	48	48.0	2.1	10.4	31.3	56.3
<i>Other Drugs</i>	18	18.0	0.0	4.8	14.3	81.0
	100	100				

	<i>N=105</i>		<i>Frequency of Use</i>			
	<i>n</i>	<i>%</i>	<i>Daily (%)</i>	<i>Weekly (%)</i>	<i>Monthly (%)</i>	<i>Less Often (%)</i>
<i>Marijuana or Hashish</i>	54	51.4	20.8	15.1	18.9	45.3
<i>"Poppers"/Nitrate Inhalants</i>	38	36.2	2.7	8.1	21.6	67.6
<i>Ecstasy</i>	35	33.3	0.0	2.9	29.4	67.6
<i>"Uppers" (Amphetamines)</i>	17	16.2	5.9	5.9	17.6	70.6
<i>Special K</i>	29	27.6	0.0	14.3	21.4	64.3
<i>Crack</i>	2	1.9	0.0	0.0	100.0	0.0
<i>Cocaine</i>	34	32.4	0.0	12.1	27.3	60.6
<i>Other Drugs</i>	17	16.2	0.0	0.0	14.3	85.7
	105	100				

Table 3d. Steroid and IV Drug Use by Age Group

	18-29 years old		30 years and older	
	<i>n</i>	(%)	<i>n</i>	(%)
<i>During past 12 months used injectable steroids/hormones</i>	11	(11.0)	6	(5.7)
<i>Ever injected drugs into veins or under skin</i>	3	(3.0)	4	(3.8)

many men with HIV and AIDS were coming to South Beach to party and engage in unsafe sex.

Only three men (1.5%) believed this was not true.

Self-Perceptions of Health and HIV-Infection Status

One-hundred thirty (63.4%) men rated their health as "excellent," 64 (31.2%) as "good," and eight (3.9%) as "fair". Three respondents (1.5%) rated their health as "poor". When questioned about their self-perceptions of current HIV-infection status, 30 men (14.9%) said there was no chance that they were infected with HIV, 66 (32.8%) said it was very unlikely, and 41 (20.4%) said it was unlikely. Seven men (3.5%) said it was very likely that they were infected, 38 (18.9%) said they knew they were infected, and 19 (9.5%) did not know if they were infected or not.

Few said they had become infected with a sexually transmitted disease (STD) during the 12 months preceding interview (Table 4.).

Table 4. Self-Reports of STDs Acquired In The Past Year

	18 years and older		18 to 29 years		30 years and older	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Syphilis	4	2.0	1	1.0	3	2.9
Gonorrhoea	4	2.0	1	1.0	3	2.9
Urethral	3		0	0.0	3	
Oral	0		0	0.0	0	
Rectal	0		0	0.0	0	
Non-gonococcal Urethritis	9	4.4	6	6.0	3	2.9
Genital/Anal Warts	6	2.9	1	1.0	5	4.8

Herpes Sores (anal/rectal)	7	3.4	2	2.0	5	4.8
Herpes Sores (genital)	5	2.4	1	1.0	4	3.8
Hepatitis	13	6.3	6	6.0	7	6.7
	205	100.0	100	100.0	105	100.0

HIV-Antibody Testing

The overwhelming majority of men surveyed (95.6%) said they had been tested for antibody to HIV-1 (Table 5). Most (58.5%) had been tested four or more times. Of 83 (40.5%) men with a primary partner, 68 (81.9%) said their partner had been tested for HIV and four (4.8%) said their partner might have been tested. Fifty-six (78.9%) of those with a primary partner said their partner's most recent test result was negative, 11 (15.5%) said it was positive, and four (5.6%) did not know their partner's most recent test result.

	18 years and older		18-29 years		30 years and older	
	n	%	n	%	n	%
Ever tested	196	95.6	93	93.0	103	98.1
Tested four or more times	120	58.5	56	56.0	64	61.0
	205		100		105	

During our survey, 51 (24.9%) of the 205 participants tested positive for HIV-1 antibody, but only 38 (18.5 %) said their most recent test result was positive (Table 6).

	Modified ELISA			Self-Report (most recent HIV test)		
	N=205	18-29 yrs.	30 + yrs.	N=205	18-29 yrs.	30 + yrs.
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Positive	51 (24.9)	15 (15.0)	36 (34.3)	38 (18.5)	10 (10.0)	28 (26.7)
Negative	154 (75.1)	85 (85.0)	69 (65.7)	153 (74.6)	79 (79.0)	74 (70.5)

Don't Know				1 (0.5)	1 (1.0)	0 (0.0)
Never Tested				8 (3.9)	6 (6.0)	2 (1.9)
Missing				5 (2.4)	4 (4.0)	1 (0.9)

Fewer than three-quarters (70.6%) of those testing positive knew they were infected. All but three of those with positive tests were receiving medical care (Table 7).

	N	n	%	%
Tested Previously	51		100.0	
Last Test Result				
Thought Negative	13		25.5	
Knew Positive	38		74.5	
Receiving Medical Care		33		86.8

Health Beliefs

Components of the Health Belief Model, Theory of Reasoned Action, and “AIDS inevitability and depression” model described by Odets [14] were used to examine the beliefs of the 205 MSM surveyed.

Regarding susceptibility, about one-third of those surveyed (31.3%) said they had about the same or a greater risk of getting infected with the AIDS virus as other MSM living in South Beach. One-hundred ten (55.2%) said they had at least some--or a small--chance of getting AIDS, 58 (29.2%) said they were almost certain they would not get AIDS, 14 (7.0%) said they had no chance of getting AIDS, and 17 (8.5%) said they had been diagnosed with AIDS.

Regarding perceived benefits of condom use, 149 (72.7%) said using a condom was very effective in preventing sexual transmission of the AIDS virus; 52 (25.3%) said using a condom was only somewhat effective in preventing transmission. One man (0.5%) said it was not at all effective. Three (1.5%) others did not know how effective a condom would be in preventing the sexual transmission of the AIDS virus.

Just over half of those surveyed (50.2%) said that in the past month, at least a little of the time, they had felt so down in the dumps that nothing could cheer them up. Other results related to theoretical variables of interest are summarized in Tables 8a, 8b, and 8c (below).

Table 8a. Health Beliefs of MSM in South Beach (N=205)			
	Respondents 18 years and Older (N=205)		
	Agree n (%)	Disagree n (%)	*Never talk about it **Already infected ***Have no idea n (%)
BARRIERS			
“Having to stop sex to put on a condom takes the fun out of sex”	74 (36.1)	131 (63.9)	
“Sex doesn’t feel as good when you use a condom”	103 (50.5)	101 (49.5)	
“It would be difficult for you to keep an erection if you wore a condom”	41 (20.0)	164 (80.0)	
PEER NORMS			
“Many of your friends have unsafe sex”	100 (48.8)	69 (33.7)	36*** (17.5)
“Your friends encourage you to have unsafe sex”	9 (4.4)	186 (90.7)	10* (4.9)
“Your friends encourage you to have safe sex”	181 (88.3)	11 (5.4)	13* (6.3)
SELF-EFFICACY			
“You find it difficult to tell a partner that you want to have safe sex”	24 (11.8)	180 (88.2)	
SERIOUSNESS			

<i>AIDS is a fatal disease there is no cure for AIDS</i>	155 (76.0)	50 (24.0)	
INEVITABILITY			
"No matter how hard you try to avoid infection, you feel that you are going to get infected with the AIDS virus someday"	33 (16.2)	148 (72.2)	23** (11.6)

	18-29 years old		
	Agree n (%)	Disagree n (%)	*Never talk about it **Already infected ***Have no idea n (%)
BARRIERS			
"Having to stop sex to put on a condom takes the fun out of sex"	32 (32.0)	68 (68.0)	
"Sex doesn't feel as good when you use a condom"	49 (49.5)	50 (50.5)	
"It would be difficult for you to keep an erection if you wore a condom"	13 (13.0)	87 (87.0)	
PEER NORMS			
"Many of your friends have unsafe sex"	54 (54.0)	30 (30.0)	16*** (16.0)
"Your friends encourage you to have unsafe sex"	5 (5.0)	91 (91.0)	4* (4.0)
"Your friends encourage you to have safe sex"	91 (91.0)	5 (5.0)	4* (4.0)
SELF-EFFICACY			
"You find it difficult to tell a partner that you want to have safe sex"	14 (14.0)	86 (86.0)	
SERIOUSNESS			
<i>"AIDS is a fatal disease there is no cure for AIDS"</i>	84 (84.0)	16 (16.0)	
INEVITABILITY			
"No matter how hard you try to avoid infection, you feel that you are going to get infected with the AIDS virus someday"	21 (21.2)	73 (73.7)	5** (5.1)

Commitments to Safer Sex

Slightly more than three-quarters (77.6%) of the 205 MSM surveyed said they had made a personal commitment to never engage in unprotected anal intercourse in order to reduce their risk for HIV infection. In addition, just over half (52.7%) made a commitment to someone else to never engage in unprotected anal intercourse to reduce their risk for infection.

Table 8c. Health Beliefs of MSM 30 years and older (n=105)			
	30 years old		
	Agree n (%)	Disagree n (%)	Have no idea Never talk about it Already infected n (%)
BARRIERS			
“Having to stop sex to put on a condom takes the fun out of sex”	42 (40.0)	63 (60.0)	
“Sex doesn’t feel as good when you use a condom”	54 (51.4)	51 (48.6)	
“It would be difficult for you to keep an erection if you wore a condom”	28 (26.7)	77 (73.3)	
PEER NORMS			
“Many of your friends have unsafe sex”	46 (43.8)	39 (37.1)	20*** (19.1)
“Your friends encourage you to have unsafe sex”	4 (3.8)	95 (90.5)	6* (5.7)
“Your friends encourage you to have safe sex”	90 (85.7)	6 (5.7)	9* (8.6)
SELF-EFFICACY			
“You find it difficult to tell a partner that you want to have safe sex”	10 (9.6)	94 (90.4)	
SERIOUSNESS			
“AIDS is a fatal disease there is no cure for AIDS”	71 (68.3)	33 (31.7)	
INEVITABILITY			
“No matter how hard you try to avoid infection, you feel that you are going to get infected with the AIDS virus someday”	12 (11.4)	75 (71.5)	18** (17.1)

Sexual Practices and the Risk of HIV Transmission

Slightly under half of the 205 surveyed (45.0%) engaged in unprotected anal intercourse during the past year (Table 9). Of the 51 found to be HIV-antibody positive, 20 (39.2%) had engaged in unprotected insertive anal intercourse; five exclusively with HIV-infected primary partners and 15 with partners who might have been susceptible to HIV infection (Table 10).

	N=205		18-29 years		30 or more years		N=51 (HIV-positive)	
	n	(%)	n	(%)	n	(%)	n	(%)
Any anal intercourse	158	(77.1)	81	(81.0)	77	(77.3)	43	(84.3)
Unprotected anal intercourse	92	(45.0)	45	(45.0)	47	(44.8)	20	(39.2)
	205		100		105		51	

	n	%
No unprotected insertive anal	31	60.8
Unprotected insertive anal	20	39.2
In mutual monogamous relationship with a positive partner	5	
Infected during past year	3	
In mutual monogamous relationship with negative partner	1	
Engaged in unprotected anal with multiple partners	14	
	51	100.0

Validity

Overall, 186 (91.2%) said their answers for the interviewer-administered portion of the

survey were “completely honest.” Seventeen (8.3%) said their answers were “mostly honest” and one man said “somewhat honest.” For the self-administered portion of the survey, 186 (91.2%) said their answers were “completely honest” and 18 (8.8%) said “mostly honest.”

Limitations

Limitations of our study include the small number of MSM available for analysis (N=205) and the cross-sectional design. Our survey results represent a snapshot of a small number of gay men who lived in South Beach and agreed to talk with us in 1996. We could not verify with others the information provided to us by respondents and we could not check their answers against other records because we guaranteed anonymity to everyone. However, the representativeness of our sample (every MSM who lived in South Beach was given an equal chance to participate), high response rate (90.7%), and apparent honesty of study participants (no one said he lied) gives us confidence in the reliability of these data and our ability to generalize to MSM currently living in South Beach.

Western blot tests to confirm ELISA-positive results became available after 45% of our sample had been tested. Their specimens were discarded. We found no discrepancies between ELISA-positive results and Western Blot tests conducted during the second half of our study. Therefore, we believe that HIV-antibody test results and other data presented in this report are as accurate as can be obtained in a field survey of such a sensitive nature.

Conclusions and Recommendations

Results of this study show a high prevalence of HIV infection (24.9%) among MSM living in South Beach: 15% of men 18-29 years old and 34.3% of those 30 years and older were infected with the virus that causes AIDS. Almost all (95.6%) of those surveyed had been

counseled and tested for HIV-1 at least once; one man said he had been tested 30 times. Of the 38 men who knew they were HIV-antibody positive, all but three were receiving medical care. Thus, C&T helps to identify HIV infections and refer those who test positive to clinical care, but it does not stop MSM from engaging in oral or anal sex.

At this point in the AIDS epidemic, C&T appears to be having minimal impact on the sexual behavior patterns of MSM. Over three-quarters of our respondents said they had participated in anal intercourse at least one time in the past 12 months. Ninety-two men in our sample (45.0%) admitted that they had engaged in the practice most likely to transmit HIV: unprotected anal intercourse.

Of the 51 men who tested HIV-antibody positive in our survey, 13 (25.5%) thought they were uninfected with the AIDS virus. Those who were infected and knew it were just as likely to engage in unprotected insertive anal intercourse as those who were infected and were unaware of their HIV infection. HIV-antibody testing and knowledge of HIV-infection status are not producing the desired impact of preventing HIV transmission among MSM in South Beach.

MSM are influenced by a number of psychosocial and environmental factors that cannot be adequately addressed in a brief HIV-antibody testing session, even if that session is "client centered." All people, including MSM, usually go through a lengthy cognitive and emotional process before they can adopt and maintain behavior change. The process of behavior change often includes many cycles of attempted change, success, and "relapse." It may take weeks, months, or even years of trying before lasting behavioral change can be achieved. Therefore, a brief interpersonal counseling session that focuses on one's HIV-infection status is usually insufficient to establish and maintain safer sex practices.

Supportive social norms and the acquisition of necessary behavioral skills are two major requirements for permanent behavior change. Concepts derived from traditional and alternative models of behavior change may be useful in directing future HIV prevention efforts for MSM in South Beach. Some men need help in developing sexual negotiation skills and support for telling their sex partners that they desire safer sex. Social and behavioral interventions may be required to promote more wide-scale commitments to safer sex and HIV prevention among MSM in South Beach.

Appendix

Frequency Distributions for MSM Living in South Beach				
<i>Age Group</i>	<i>18-29 years old</i>		<i>30 years and older</i>	
<i>(Sample Size)</i>	<i>(n=100)</i>		<i>(n=105)</i>	
	<i>Frequency</i>	<i>(%)</i>	<i>Frequency</i>	<i>(%)</i>
DEMOGRAPHIC VARIABLES				
Sexual Orientation				
Homosexual	82	(82.0)	99	(94.3)
Bisexual	12	(12.0)	6	(5.7)
Heterosexual	4	(4.0)	0	(0.0)
Other	2	(2.0)	0	(0.0)
Race/Ethnicity				
White (Non-Hispanic)	48	(48.0)	62	(59.0)
Hispanic, Latino, Spanish	44	(44.0)	32	(30.5)
Black (African American)	5	(5.0)	7	(6.7)
Other	3	(3.0)	4	(3.8)
Age				
18-23 Years	10	(10.0)		
24-26 Years	31	(31.0)		
27-29 Years	59	(59.0)		
30 Years or Older			105	(100.0)
SOCIOECONOMIC VARIABLES				
Education				
Bachelor Degree or Higher	61	(61.0)	74	(70.5)

	<i>Frequency</i>	<i>(%)</i>	<i>Frequency</i>	<i>(%)</i>
GEOGRAPHIC MOBILITY				
Residency in South Beach				
Less than 1 year	44	(44.0)	15	(14.3)
Less than 3 years	74	(74.0)	55	(52.4)
3 years or more	26	(26.0)	50	(47.6)
Mobility in past 5 years				
Moved at least once	91	(91.0)	80	(76.2)
Moved three or more times	46	(46.0)	18	(17.1)
Moved only once, to South Beach	23	(23.0)	45	(42.9)
Born in Florida	11	(11.0)	5	(4.8)
SOCIAL ACTIVITIES				
Attended gay bars/night clubs in South Beach (past year)				
At least once-a-week	56	(56.0)	40	(38.1)
Two or more times a week	27	(27.0)	23	(21.9)
Visit cruising places to meet sex partners (in typical month)				
At least once-a-month	47	(47.0)	53	(50.5)
Two or more times a month	40	(40.0)	44	(41.9)
SEXUAL ACTIVITIES				
Oral or anal intercourse before age 17 years	53	(53.0)	48	(45.7)
First sexual intercourse (oral or anal) was forced	8	(8.0)	5	(4.8)
Fifty or more lifetime sex partners (oral or anal)	44	(44.9)	74	(71.9)

One-hundred or more lifetime sex partners (oral or anal)	30	(30.6)	44	(42.7)
Oral, vaginal, or anal intercourse with a woman (in the past year)	14	(14.0)	10	(9.5)
Has primary partner (male)	41	(41.0)	42	(40.0)
SEXUAL RELATIONSHIP WITH PRIMARY PARTNER				
Neither has sex with others	25	(59.5)	21	(48.8)
Only respondent has sex with others	2	(4.8)	3	(7.0)
Only partner has sex with others	0	(0.0)	2	(4.7)
Both have sex with other people	12	(28.6)	9	(20.9)
Respondent has sex outside, unsure about partner	0	(0.0)	5	(11.6)
Respondent has no outside sex, unsure about partner	3	(7.1)	3	(7.0)
Engaged in anal intercourse while high in the last year	56	(56.6)	49	(46.7)
KNOWLEDGE OF RISK				
HIV/AIDS is not only a problem for older MSM	92	(94.9)	96	(94.1)
HIV/AIDS is a problem for both older and younger MSM	33	(34.0)	31	(30.4)
Know at least one HIV+ person	95	(95.0)	102	(97.1)
Know 6 or more HIV+ persons	58	(58.0)	74	(70.5)
Believe many men HIV+ or with AIDS coming to South Beach to party/have unsafe sex	59	(59.0)	52	(49.5)

Believe No HIV + men or with AIDS coming to South Beach to party/have unsafe sex	1	(1.0)	2	(1.9)
SELF PERCEPTIONS OF HEALTH AND HIV INFECTION STATUS				
Personal Health Rating				
Excellent	61	(61.0)	69	(65.7)
Good	35	(35.0)	29	(27.6)
Fair	3	(3.0)	5	(4.8)
Poor	1	(1.0)	2	(1.9)
Perception of HIV-infection status				
No chance of infection	12	(12.4)	18	(17.3)
Very unlikely infected	36	(37.1)	30	(28.8)
Unlikely infected	21	(21.6)	20	(19.2)
Very likely infected	6	(6.2)	1	(1.0)
Already infected	11	(11.3)	27	(26.0)
Don't know if infected	11	(11.3)	8	(7.7)
HIV-ANTIBODY TESTING				
Has primary partner	41	(41.0)	42	(40.0)
Primary partner HIV tested	31	(75.6)	37	(88.1)
Primary partner possibly tested	4	(9.8)	0	(0.0)
Primary partner tested negative	29	(85.3)	27	(73.0)
Primary partner tested positive	3	(8.8)	8	(21.6)
Don't know partner's result	2	(5.9)	2	(5.4)

Same or greater risk of infection with the AIDS virus (compared to other MSM in South Beach)	34	(35.1)	29	(27.9)
Chances of getting AIDS				
Almost certain will not or won't	24	(24.7)	34	(33.3)
Some or small chance	59	(60.8)	51	(50.0)
No chance	10	(10.3)	4	(3.9)
Diagnosed with AIDS	4	(4.1)	13	(12.8)
BENEFITS OF CONDOM USE				
Condom effectiveness in preventing HIV transmission				
Very effective	68	(68.0)	81	(77.1)
Somewhat effective	29	(29.0)	23	(21.9)
Not at all effective	1	(1.0)	0	(0.0)
Don't know how effective	2	(2.0)	1	(1.0)
MOOD				
So down in the dumps in past month nothing could cheer me up	51	(51.0)	52	(49.5)
PREVENTION				
Commitment to self to have no unprotected anal intercourse	80	(81.6)	79	(80.6)
Commitment to someone else to have no unprotected anal sex	53	(54.1)	55	(56.1)

Footnotes

¹ Using 1993 demographic data for Dade County, Florida, adjustments in population growth for census tracts 42-45 were made. See: Dade County Public Health Unit (July 1995). *HRS District XI 1994 Annual Report of Vital and Morbidity Statistics*. Miami, Florida: Dept. of Health and Rehabilitative Services.

² The number of married men 18-29 years of age was estimated from a cohort of married men 15 to 34 years age for each census tract (42-45). See: U.S. Department of Commerce, Bureau of The Census. *1990 Census of Population and Housing Summary for Dade County Florida*. Washington, DC: U.S. Department of Commerce.

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