

Condom use with steady and casual partners in inner city African-American communities

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Objectives: This study examined rates of and factors associated with consistent condom use with steady partner and with casual partners in inner city African-American communities with high sexually transmitted infection (STI) prevalence.

Methods: Structured interviews were conducted using street intercept methods and venue based sampling with 997 African-American residents of inner city neighbourhoods in Houston and Dallas, Texas; of which data were analysed for the 736 that reported having sex in past 2 months. Condom use was measured as a proportion of use in last five sex acts with steady and casual partners.

Results: Reported rates of consistent condom use were high—31.4% with steady partner and 29.5% with casual partner. Multivariate logistic models differed by type of partner. Married people and those with history of STI were less likely to use condoms with the main partner, while older people were less likely and males, and those visiting a doctor more likely to use condoms with casual partners.

Conclusions: The proportion of condom use with both partner types was relatively high reflecting a general trend towards increased condom use in the United States. The finding of lower reported rates with casual partners has been discussed. Factors associated with condom use differ according to type of partner. Precise measurement of actual condom use continues to be an elusive task but is required for the design of appropriate messages and evaluation of STI programmes.

Sexually transmitted infections (STIs), including HIV/AIDS, are a major cause of mortality and morbidity in the United States with 18.9 million new cases every year.¹ They tend to disproportionately affect African-American subpopulations,² especially poor, inner city groups, and diseases such as syphilis are associated with significant health disparities.³ Prevention and control of STIs require multipronged and multilevel approaches including regular screening and appropriate treatment when required.

Reduction in the number of partners or even having sex with one partner may not be fully effective because of the partners' sexual history and behaviour.^{4–5} Even though a recent report finds preventive methods such as condoms to be only partially effective,⁶ STI/HIV control and prevention programmes in public health do emphasise consistent use of condoms with sex partners because there is expert consensus that for any sex act with a partner whose sexual history is unknown or even when one's own serostatus is not known, use of condoms consistently and correctly decreases transmission of HIV and STIs.^{7–9} Effectiveness of condom use in preventing or controlling the spread of STI/HIV has been studied by various authors,^{10–12} and the connection between lack of condom use and some STIs has been demonstrated.^{12–14} A recent study of African-American adolescents found that those not using condoms consistently were twice as likely to acquire STI.¹⁵ However, the benefits of condom use may be limited by inconsistent use and low use in groups at highest risk.¹⁶ Identification of various sociodemographic and risk factors associated with inconsistent condom use will help us increase condom use by creating intervention programmes that design appropriate messages or target and cater to specific segments within a population thereby reducing the STI burden.

This study aimed to examine and compare (i) the rates (prevalence), and (ii) correlates of consistent condom use with two different types of partners—steady or main partners and casual (non-steady or irregular) partners—in predominantly

African-American, low income, inner city housing developments in the two urban areas of Dallas and Houston, Texas, which have been identified, as high morbidity areas (HMAs) for syphilis and other STIs/HIV. The study was part of baseline assessment (before implementation) of a community based popular opinion leaders (CPOLs) behavioural intervention to prevent syphilis in high morbidity African-American communities.

METHODS

Street intercept methods were used by trained male and female African-American outreach workers to approach and interview respondents (over 18 years), who were residents of specified inner city zip codes in Houston and Dallas, Texas in the months of June and July 2004. Structured interviews were conducted with respondents in the location or venues where they were identified such as parking areas of housing developments, street corners, outside convenience stores, fastfood or other restaurants, in beauty shops, laundromats, and local parks in these zip codes. Interviewers explained the study on a one to one basis, talking to each respondent in as much seclusion as possible. Respondents read and signed an informed consent form that made them aware of the sensitive nature of questions in the survey and assured confidentiality. Once the respondent agreed, he or she generally completed the 20 minute survey, and received a \$5 grocery store gift card. About 20% of the people approached in these venues refused to respond because of lack of time or sensitive sexual behaviour questions.

Of 997 African-American participants who completed the interviews, only 84% (n = 736) who reported having sex in the 2 months before interview were questioned further on

Abbreviations: CDC, Centers for Disease Control and Prevention; CPOLs, community based popular opinion leaders; HMAs, high morbidity areas; STD, sexually transmitted disease; STI, sexually transmitted infection

Table 1 Sociodemographic characteristics and sexual behaviours of respondents who reported having sex within 2 months before survey

Variable*	No	%	Variable*	No	%
Sex in last 2 months					
No	261	26.2			
Yes	736	73.8			
Total	997	100			
All further analysis conducted for 736 respondents					
Sociodemographics					
Gender			Employment		
Female	390	53.2	No	362	49.3
Male	343	46.8	Yes	372	50.7
Marital status			Yearly income		
All others	633	86.4	<\$10 000	316	44.2
Married	100	13.6	≥\$10 000	399	55.8
Age			Schooling		
18–25	222	31.8	11 years or less	256	35.7
26–44	381	54.6	12 years	421	58.8
45 and above	95	13.6	13 years or more	39	4.5
Sexual behaviours					
Sex with steady/main partner			Sex with casual partner		
No	116	15.8	No	414	56.3
Yes	595	80.8	Yes	254	34.5
Missing/refused	25	3.4	Missing/refused	68	9.2
Total	736	100	Total	736	100
Consistent condom use with steady partner			Consistent condom use with casual partner		
No	305	51.3	No	177	69.7
Yes	187	31.4	Yes	75	29.5
Missing/refused	103	17.3	Missing/refused	2	0.8
Total	595	100	Total	254	100

*Total does not add up to 736 for some variables because of missing values.

sex related behaviours. Condom use was measured as proportional response to the question “Of the last five times you had sex, how many times did you use a condom?” Possible responses for condom use ranged as a number between none and five and were noted in separate items for sex with steady (main or primary) partner and sex with casual (non-steady or irregular) partner. These were later recoded into dichotomous variables with those reporting condom use five out of five times classified as “consistent condom users,” and anyone reporting condom use four or fewer times in last five sex acts classified as “inconsistent user.” The study examined two dependent variables with similar categorisation: condom use with steady partner and condom use with casual partners.

Frequencies of sociodemographic and sexual behavior items are reported and analysed for 736 cases only using Stata. Bivariate analysis (crude odds ratios) was conducted to test association of key independent variables with the two dependent variables. Independent variables at significance level of $p < 0.1$ in bivariate analysis included as covariates in multivariate logistic regression procedures were gender, age, marital status, schooling, income, alcohol use before sex, drug use before sex, exchange of sex for drugs or money, having visited a doctor in past 12 months, history of STI, and testing for syphilis and HIV in past 6 months. The adjusted odds ratios helped determine correlates of or factors associated with consistent condom use with steady partner and with casual partner in the last five sex acts, while controlling for above mentioned covariates. Ethical approval for the study was obtained from the institutional review boards of the local university and from the Centers for Disease Control and Prevention (CDC).

RESULTS

Table 1 provides sociodemographic and sex behaviour characteristics of the sample of 736 respondents sexually active in past 2 months, with 80.8% (n = 595) reporting sex with a steady partner, and 38% (254) reporting sex with a

casual partner. About 31% (n = 187) and approximately 30% (n = 75) reported consistent condom use (five of the five last times of sex) with steady partner and with casual partner, respectively.

Table 2 shows the results of examination of association of various sociodemographic and sexual risk behaviour patterns, including drug and alcohol use, with consistent condom use. Results are reported in separate columns for consistent condom use with steady partner and with casual partners, and under each type of partner crude odds and adjusted odds ratios (controlling for covariates) are reported separately. The bivariate analysis shows some similarity in the list of independent variables associated with consistent condom use for both types of partners.

The multivariate logistic regression procedure, after controlling for covariates, found that those who were married and had a history of sexually transmitted diseases (STD) were more than half as likely to use condoms consistently with their steady partner. However, the significant predictors for condom use with casual partners were different. After adjusting for covariates, males were more than twice as likely than females and those who had visited a doctor were five times as likely as those who had not visited a doctor to use condoms consistently with a casual partner, whereas compared to younger people, the older age group (45 years or more) respondents were less likely to use condoms consistently.

DISCUSSION

The first aim of this study, to examine and compare reported rates of consistent condom use with two types of partners in predominantly African-American communities classified as having high morbidity for syphilis and other STI/HIV, found them to be quite high—31.4% with main partner and 29.5% with casual partner. The high proportions reported mirror a national trend of increasing condom use in the United States. Through the 1980s and 1990s, increased use was reported by at-risk groups such as adolescents, young adults and ethnic

Table 2 Factors associated with consistent condom use with steady and casual partners

	Steady/main partner				Non-steady/irregular partner			
	Crude OR	(95% CI)	Adjusted OR	(95% CI)	Crude OR	(95% CI)	Adjusted OR	(95% CI)
Gender	–	–	–	–	–	–	–	–
Female	–	–	–	–	–	–	–	–
Male	1.17	(0.81 to 1.67)	1.46	(0.89 to 2.40)	0.89	(0.51 to 1.53)	2.39	(1.09 to 5.02)*
Age	–	–	–	–	–	–	–	–
18–25	–	–	–	–	–	–	–	–
26–44 years	0.61	(0.40 to 0.92)*	0.64	(0.38 to 1.08)	0.67	(0.37 to 1.19)	0.65	(0.30 to 1.43)
45+ years	0.61	(0.33 to 1.11)	0.53	(0.26 to 1.13)	0.39	(0.15 to 0.99)*	0.28	(0.09 to 0.95)*
Marital status	–	–	–	–	–	–	–	–
Others	–	–	–	–	–	–	–	–
Married	0.71	(0.41 to 1.22)	0.48	(0.23 to 0.99)*	1.65	(0.56 to 4.79)	0.58	(0.06 to 5.31)
Schooling	–	–	–	–	–	–	–	–
0–12 years	–	–	–	–	–	–	–	–
12 years completed	1.37	(0.91 to 2.05)	1.46	(0.88 to 2.41)	1.29	(0.72 to 2.29)	–	–
>12 years	0.48	(0.18 to 1.25)	0.56	(0.19 to 1.61)	2.46	(0.69 to 8.78)	–	–
Annual income	–	–	–	–	–	–	–	–
>\$10 000	–	–	–	–	–	–	–	–
≤\$10 000	1.22	(0.84 to 1.77)	–	–	1.43	(0.83 to 2.44)	1.35	(0.64 to 2.86)
Alcohol use before sex in past 2 months	–	–	–	–	–	–	–	–
Never	–	–	–	–	–	–	–	–
Sometime	0.47	(0.31 to 0.73)*	0.64	(0.38 to 1.12)	0.63	(0.34 to 1.16)	1.85	(0.81 to 4.22)
Every time	0.48	(0.27 to 0.85)*	0.62	(0.28 to 1.35)	0.43	(0.20 to 0.92)*	0.91	(0.32 to 2.54)
Drug use before sex in past 2 months	–	–	–	–	–	–	–	–
Never	–	–	–	–	–	–	–	–
Sometime	0.65	(0.41 to 1.04)	1.04	(0.53 to 2.02)	0.52	(0.28 to 0.98)*	0.52	(0.22 to 1.23)
Every time	0.60	(0.32 to 1.12)	0.59	(0.25 to 1.43)	0.44	(0.20 to 0.97)*	0.51	(0.17 to 1.49)
Exchanged sex for drugs or money	–	–	–	–	–	–	–	–
No	–	–	–	–	–	–	–	–
Yes	0.47	(0.26 to 0.82)*	0.65	(0.30 to 1.41)	0.43	(0.21 to 0.85)*	0.82	(0.32 to 2.04)
Seen a doctor in past 12 months	–	–	–	–	–	–	–	–
No	–	–	–	–	–	–	–	–
Yes	1.88	(1.2 to 2.8)*	1.25	(0.71 to 2.21)	4.42	(2.43 to 8.03)*	5.61	(2.38 to 13.2)*
Ever been told that you have STD	–	–	–	–	–	–	–	–
No	–	–	–	–	–	–	–	–
Yes	0.39	(0.22 to 0.68)*	0.40	(0.20 to 0.80)*	1.05	(0.55 to 2.02)	0.86	(0.35 to 2.08)
Tested syphilis in past 6 months	–	–	–	–	–	–	–	–
No	–	–	–	–	–	–	–	–
Yes	2.96	(2.0 to 4.4)*	1.61	(0.87 to 2.99)	2.18	(1.26 to 3.77)*	0.58	(0.22 to 1.51)
Tested HIV in past 6 months	–	–	–	–	–	–	–	–
No	–	–	–	–	–	–	–	–
Yes	3.24	(2.24 to 4.9)*	1.88	(0.98 to 3.59)	2.61	(1.49 to 4.6)*	2.03	(0.78 to 5.31)

minorities. Between 1982 and 1995, condom use rates increased faster among African-Americans and Hispanics than among white people. In 1982, white people were twice as likely to use condoms as African-American or Hispanics (13% versus 6% and 7% respectively), but by 1995 prevalence of condom use was 20% in all three groups.¹⁷

Although, some studies report lower rates of consistent condom use with primary partners,¹⁸ this study found a lower proportion of consistent condom use with casual partners. The reasons for this finding are not exactly clear, especially given some limitations in the study design, but it is alarming enough to warrant further investigation. In order to shed more light on this, we recategorised the variable that measured condom use the last five times into “never used” which was none of five times, “sometimes,” which was one to four of five times, and “always” which was five of five times. In this recategorisation, the “consistent user” value of the dependent dichotomous condom use variable used in the logistic procedures was the same as “always,” and “inconsistent user” was broken down into “sometimes” and “never.” We found that the percentage of zero or “never used” condoms with steady partner was about 38% and much higher compared to 11% “never used” condoms with casual partners. The proportion of “sometimes used” condoms with casual partners stood at 59% and was higher than the 24% “sometimes used” condoms with steady partner. One potential explanation could be that respondents

may use condoms with casual partners some of the time rather than all of the time. Inconsistent condom use with a casual partner is possibly determined by various factors ranging from availability of condoms and the place of the sex act to perceptions of risk about the partner.

Other limitations in the study instrument also preclude clarity. It is possible that recall of condom use with steady partner is better than that with casual partners, especially if there are multiple casual partners. However, the instrument did not measure the number of casual partners for each respondent. The instrument also lacked in items that specifically captured the number of times the respondent had sex either with main partner or casual partner(s) in the last 2 months. We used a proportional measure of condom use (how many times out of the last five sex acts), but did not measure total frequency of sexual acts. Since some respondents may not have had sex five times with either partner this might have led to an underestimation of “consistent condom use.” Proportional measures are known not to capture variance related to abstinence from sex if they are used in isolation from information about frequency of intercourse, and also underestimates the true risk for STIs.¹⁹

Some additional design related issues limit precise estimation of prevalence or the generalisation of findings. For instance, the instrument did not prompt participants on how steady or main partner was defined. Without such previous definition the interpretation of consistent condom use rates

with steady partner can also be imprecise. Data collection methods that rely on self reports of sexual behaviour are limited by recall bias and are difficult to verify. Use of an interviewer or knowledge of the researcher and organisation behind the survey (because of an elaborate informed consent form) may also lead the respondent to provide socially desirable responses. For instance, some respondents may report higher rates of condom use in order to gain researcher approval. The sampling strategy of using venues or locations may have influenced the respondent pool available to our interviewers or made respondents conscious of their surroundings given the sensitive sexual behaviour items. For instance, a high number of refusals to answer (recoded as missing) arose in the item related to condom use with main partner in the last five sex acts and reporting casual partners (see table 1). This may have been for two reasons—a sensitive question asked during an interview in a public venue, and probably respondents not using condoms with main partners or who had casual partners and chose to refuse to respond to the item instead of answering it. Further analysis of respondents who refused to answer these items did not reveal many differences from those who had responded, except that employed and under \$10 000 income group respondents were disproportionately higher in the refused to answer set. What needs to be taken into account is that some factors related to interviewer-participant interactions as well as participant perception of the study and social desirability may lead to an overestimation of consistent condom use, while certain instrument and measurement related issues discussed earlier may have led to underestimation of consistent condom use rates. In both cases the true picture of condom use in the community is not precisely captured.

Our second aim was to determine factors associated with consistent condom use in both partner types; and consistent with previous research,²⁰ the multivariate model for condom use with steady partner revealed that married respondents and those with a history of STI were less likely to use condoms consistently with their main partner. What are the possible explanations for those with history of STI not using condoms consistently with main partners? It is worth exploring causality through a well designed study because it is possible that the STI (history) exists specifically because they were less likely to have used a condom in the past. Why did the STI experience not stimulate or motivate them to use condoms—trust, misperception of risk, lack of discussion with partner, or confidence about the treatment received for the STI? Further qualitative research is needed to determine the underlying rationale for this risk behaviour. The spread of HIV between spouses in less developed countries has been related to lack of condom use in the main partnership because of issues of trust in the relationship, gender and power imbalance within the family, as well as the imperative to have children.²¹

The multivariate model for consistent condom use with casual partners showed that males were twice as likely to use condoms consistently compared to females, and at the same time, older age people were less likely to use condoms. Analysis of data from 32 states for 2000–3 found that HIV rates among non-Hispanic African-American females were 19 times higher than rates among non-Hispanic white females.²² This underscores the need for HIV intervention programmes targeted to females in minority populations through condom promotion programmes. Since this study was part of a baseline assessment for a popular opinion leader intervention, some questions arise with respect to another finding—those who visited a doctor in the past 12 months reported significantly higher rates of consistent condom use with a casual partner: Did the clinical interactions truly influence

Key messages

- Overall reported rates of consistent condom use with both steady and casual partners are high and mirror national trends even in communities classified as high morbidity for syphilis and other STI/HIV
- Almost 31% of those who had a main partner reported using condoms consistently with them. Multivariate models, controlling for covariates, found married people and those with history of STI were significantly less likely to use condom with main partner
- About 30% reported consistent condom use with a casual partner, Multivariate model, adjusting for covariates, found that older people were significantly less likely, while males and those who had visited a doctor were significantly more likely, to use condoms consistently with casual partners

this condom use behaviour by exposing them to preventive messages about condoms, and generate a risk perception that prompted consistent condom use, or did exposure to medical/public health facilities with subsequent awareness of medical/researcher values induce them to false inflate condom use rates for social desirability reasons and to gain researcher approval? Further qualitative research will help obtain insights into this behaviour and tell us if this group or some other groups can be used as a true resource for peer leadership or the reasons why they are over-reporting condom use.

Future research will have to address some limitations of measurements of condom use, and explore and determine the motivations and rationale for not using condoms or for potentially misreporting condom use. More studies are needed to determine actual condom use and divergence between actual and reported condom use so that we can design appropriate messages, target segments of the population that are at risk but truly not using condoms, and properly evaluate STI prevention programmes that emphasise condoms as a preventive method.

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CONTRIBUTORS

NC was principal investigator for the Texas sites and conducted data collection, data management, and wrote the first draft of the manuscript; SW is CDC Program Officer and assisted with writing of the manuscript and preparing the final version; MH contributed to data management, conducted data analysis, and helped in writing of various versions; data were collected while NC was assistant professor at Texas A&M University.

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