

Predictors of Sexual Risk-Taking Among New Drug Users

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We studied predictors of HIV-related sexual risk-taking among individuals who initiated the use of heroin or methamphetamine during the past 5 years. Many studies have linked drug use to HIV risk, but most research has been based on samples of users with long-established drug careers. We conducted face-to-face interviews with 153 adult new drug users in Atlanta, GA. Drug use was not a statistically significant predictor of sexual risk, but gender, age, race, homelessness status, childhood neglect, level of paranoia, and level of (dys)functionality in handling disagreements were associated with frequency of sexual risk-taking. We discuss the need to incorporate new drug users in HIV/AIDS and other health-related prevention and intervention programs.

Numerous studies have demonstrated that drug use is a major risk factor for acquiring HIV because of its direct relationship through unsafe injection practices and unsafe sexual practices (Deren, Coyle, Singer, Kang, & Beardsley, 2001; Roberts, Wechsberg, Zule, & Burroughs, 2003). Drug use has been linked with a variety of HIV-related sexual risk practices, including having multiple sex partners (Roberts et al., 2003; Wingood & DiClemente, 1998; Zule & Desmond, 1999), engaging in sex while under the influence of drugs (Hoffman, Klein, Eber, & Crosby, 2000; Longshore, Anglin, Hsieh, & Annon, 1993; Sterk, Theall, Elifson, & Kidder, 2003), failing to use barrier methods to prevent the spread of HIV and other sexually transmitted infections (Somlai, Kelly, McAuliffe, Ksobiech, & Hackl, 2003; Sterk, Theall, & Elifson, 2003), and bartering sex for drugs or other goods (Johnson, Brems, Wells, Theno, & Fisher, 2003; Kwiatkowski & Booth, 2000; Sterk, 1999; Sterk, Elifson, & German, 2000). Typically, studies on drug use and sex-related HIV risk have included participants whose drug use behaviors were established from long-term drug use. The average age of participants in these studies has tended to be mid-30s to early 40s, with most having initiated their drug use during their teenage years. Frequently, the study participants had been using drugs between 10 and 30 years. Accordingly, they have had many years to develop behavioral repertoires with regard to their drug use practices and sexual behaviors, including those that place them at risk for HIV.

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Our knowledge of HIV risk behaviors among people whose term of drug use is shorter and whose drug-using behaviors are not as well-entrenched is much more limited. New drug users may be more difficult to identify because they are more likely to control their drug habit, thereby being less visible (Boeri, Sterk, & Elifson, 2006). In a study of 95 new users of heroin or cocaine, with "new user" defined as having used the drug in question for the first time within the past 5 years, Kuebler, Hausser, and Gerbassoni (2000) found that compared to more established users, new drug users reported less injection use, less frequent drug use, fewer health problems, fewer social difficulties, and less involvement in HIV risk behaviors. Results from a study involving young adults who began injecting drugs during the past 3 years revealed greater levels of HIV risk among these new drug injectors than among their peers who had been drug injectors for more than 3 years (Doherty, Garfein, Monterroso, Brown, & Vlahov, 2000). Similar findings have been reported by Fennema and colleagues (1997). Carneiro, Fuller, Doherty, and Vlahov (1999) reported that younger initiates to drug injection reported higher rates of HIV-related risk compared to older initiates, and that older drug users injected less frequently, used their own injection paraphernalia more often, and cleaned their injection equipment with bleach more often.

The objective of the current study was to expand our knowledge about new drug users, people who initiated drug use within the past 5 years. More specifically, we focused on new users of heroin and methamphetamine and factors that are predictive of involvement in HIV-related sexual risk-taking. The study was guided by the theory of reasoned action (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975; Rosenstock, Strecher, & Becker, 1988, 1994) and the theory of planned behavior (Ajzen, 1985, 1988, 1991). These theories are premised on the notion that various belief and attitude structures underlie behaviors. To the extent that people's beliefs and attitudes lead them to feel positively

about engaging in a particular behavior, they can be expected to demonstrate a concordant likelihood of practicing that behavior. Likewise, behavioral expectations and the underlying causes of these expectations are likely to influence people's choices on how to act based on what they think others will want or expect them to do (e.g., normative beliefs). Thus, antecedents such as depression, self-esteem, and childhood maltreatment are relevant to understanding behaviors.

The health belief model (Rosenstock et al., 1988, 1994) also served as a guiding theoretical framework. This model is premised on the notion that what people think about a particular behavior and about the likely rewards or consequences of engaging in that behavior will have a direct impact upon their subsequent involvement in that behavior. The factors effecting such expectations (e.g., past experiences with childhood maltreatment and psychological problems like depression) are, therefore, important to understand if one wishes to comprehend someone's behaviors.

Previous studies have identified a wide variety of predictors of HIV risk behaviors, and on that basis, we examined different predictor measures in this study. For example, demographic variables such as gender, age, educational attainment, race, and marital status have been associated with HIV risk (Klein, Elifson, Sterk, & Theall, 2002; Newcomb et al., 1998; Smereck & Hockman, 1998; Wayment et al., 2003). In addition, childhood maltreatment, including physical, sexual, and emotional abuse and neglect, has been linked to HIV risk in adulthood (Bensley, Eenwyk, & Simmons, 2000; Morrill, Kasten, Urato, & Larson, 2001). Psychological and psychosocial functioning (e.g., self-esteem, depression, anxiety, impulsivity) have also been shown in many studies to be predictive of HIV-risk practices (Schroeder, Hobfoll, Jackson, & Lavin, 2001; Somlai et al., 2000; Stoskopf, Kim, & Glover, 2001).

METHOD

Procedure

As part of Project TRENDS, a study on emerging drug use patterns, 153 new users of heroin and methamphetamine were recruited in Atlanta, Georgia. Users of these drugs were chosen as the major focus of Project TRENDS because the use of these drugs was rising rapidly in the Atlanta area when the study was conducted (National Institute on Drug Abuse, 2001), and we wanted to learn more about the factors associated with emergent drug-use trends. Street outreach techniques, including ethnographic mapping and targeted sampling, guided the recruitment of study participants. Initial recruitment locations were identified based on a community assessment that involved a review of relevant epidemiological indicators (e.g., drug-related emergency room visits, drug-related arrest statistics, among others) and interviews with social and health care professionals from a wide range of agencies, as well as with local researchers and members of the target population

(Tashima, Crain, O'Reilly, & Sterk-Elifson, 1996; Sterk, 1999). The outreach workers, a team of men and women from different racial/ethnic backgrounds, were trained by the principal investigator and other project leaders regarding how to locate and approach members of the target population using the techniques described above. Upon the selection of sampling sites, targeted sampling was employed to ensure the inclusion of a wide representation of users of emergent drugs such as methamphetamine and heroin. Targeted sampling was complemented with chain referral and theoretical sampling (Glaser & Strauss, 1967; Kaplan, Korf & Sterk, 1986; Strauss & Corbin, 1990).

To be eligible for Project TRENDS, study participants had to be 18 years of age or older, reside in the one of the study communities, be out of drug treatment or any other institutional setting, and be proficient in English. The exclusion criterion was being intoxicated or high at the time of the interview. In addition, to be considered an active drug user (which was a requirement for participation in Project TRENDS), study participants needed to have used either heroin or methamphetamine at least once during past the 30 days and at least 3 times during the past 3 months prior to the interview. The latter criterion was added to guard against including one-time experimental users. For the purpose of this article on new drug users, we included an additional criterion: that the initiation of heroin or methamphetamine use occurred in the 5 years prior to the interview. We included this 5-year time limit so the research would be consistent with other studies on new users. In selecting this time frame, we made no assumptions about what other drugs the person may have been using.

People who met the eligibility criteria and who were interested in participating in the study were scheduled for an interview appointment at a centrally-located field site, their home, a local restaurant, or any other safe location that was convenient to the study participant and the interviewer. Prior to the face-to-face, questionnaire-based interview, interviewers informed the study participants of the nature of the study, the time required for participation, and other informed consent procedures. The IRBs at both Emory University and Georgia State University approved the consent procedures. Study participants were informed that all study materials were protected by a certificate of confidentiality. The interview took approximately one hour to complete, and the study participants received \$15 as compensation.

Sample

Nearly two thirds (66.0%) of the study participants were male. The mean age was 25.5 (range = 18-50, $SD = 7.7$), and most were White (71.9%). In terms of their relationship status, almost half (46.7%) were in a relationship, and almost another half (44.1%) were single at the time of the interview. Slightly more than one fourth (27.0%) had not completed high school or its equivalent; 36.8% had graduated from high school; and the remainder (36.2%) had had at least some college training. Most of the study partici-

pants (72.6%) self-identified as heterosexual.

Table 1 shows the use of drugs among members of the study population. Alcohol and marijuana were the two most commonly-used substances for this study's respondents, with more than 75% of the people interviewed acknowledging their consumption during the preceding month. Other drugs were fairly widely-used as well, including cocaine (used by 56.5% of the study participants), crack (44.0%), speedball (40.7%) and the catch-all "other drugs" (37.0%).

Measures

Frequency of HIV-related sexual risk. This construct was the dependent variable in our analyses. It was assessed based on 7 items asking whether the study participants *never, rarely, sometimes, almost always, or always* engaged in the following behaviors: had sex while high, had sex with a partner who was high, purchased sex with drugs or money, traded sex for drugs, traded sex for money, engaged in sexual relations with more than one person at a time, or had sex with someone who paid others

Table 1. Demographic Characteristics of and Drug Use in the Study Sample

	Methamphetamine Users (n = 78)	Heroin Users (n = 75)	Total Sample (N = 153)
Gender			
Male	75.6	56.0	66.0
Female	24.4	44.0	34.0
Age			
18-29	91.0	66.7	79.1
30-39	6.4	20.0	13.1
40+	2.6	13.3	7.8
Mean (years old)	22.3	28.7	25.5
Race			
Caucasian	79.5	64.0	71.9
African American	9.0	33.3	20.9
All others	11.5	2.7	7.2
Marital Status			
Single	46.8	41.3	44.1
Involved (married, cohabiting, etc.)	49.4	44.0	46.7
All others	3.8	15.7	9.2
Education			
Less than high school	21.8	32.4	27.0
High school graduate	32.0	41.9	36.8
At least some college	46.2	25.7	36.2
Sexual Orientation			
Heterosexual	76.9	96.0	86.3
Gay/Lesbian/Bisexual	23.1	4.0	13.7
Drug Use: % Who Used (past month)			
Alcohol	87.0	74.7	80.9
Marijuana	81.6	72.0	76.8
Cocaine	49.2	62.7	56.5
Crack	20.6	54.7	44.0
Heroin	7.7	96.0	52.9
Speedball	18.2	44.0	40.7
Other opiates	33.3	18.7	24.6
Methamphetamine	93.6	17.3	59.4
Amphetamine	16.2	4.0	8.0
Unprescribed pills	30.2	24.0	26.6
Hallucinogens	32.8	6.7	18.7
Other drugs	65.1	13.3	37.0
Mean (SD) Days of Drug Use (past month)			
Alcohol	9.0 (9.4)	9.5 (10.8)	9.2 (10.0)
Marijuana	12.5 (12.9)	10.9 (12.0)	11.7 (12.5)
Cocaine	2.5 (4.9)	6.9 (9.0)	4.9 (7.7)
Crack	1.1 (5.1)	9.0 (11.8)	6.5 (10.8)
Heroin	1.1 (5.3)	21.1 (10.9)	10.9 (13.1)
Speedball	2.7 (6.5)	5.3 (9.6)	5.0 (9.3)
Other opiates	1.3 (2.9)	0.9 (3.0)	1.1 (3.0)
Methamphetamine	10.1 (7.9)	0.6 (1.9)	5.4 (7.5)
Amphetamine	0.7 (2.6)	0.1 (0.8)	0.3 (1.6)
Unprescribed pills	2.1 (5.3)	1.2 (3.5)	1.6 (4.3)
Hallucinogens	0.7 (1.4)	0.3 (1.5)	0.5 (1.5)
Other drugs	3.5 (5.1)	0.5 (1.5)	1.9 (4.2)

to have sex with him/her. Higher scores indicated more frequent involvement in risky sexual practices. The reliability coefficient for this scale was .79.

Demographic characteristics. These included gender, age (continuous), ethnicity (African American vs. not African American), educational attainment (continuous variable), homelessness status (homeless versus domiciled), marital status (two dichotomous measures: married vs. not married and single vs. not single), employment status (unemployed vs. all others), and self-identified sexual orientation (heterosexual vs. not heterosexual).

Childhood maltreatment measures. We used the Childhood Trauma Questionnaire (Bernstein et al., 1994) to examine this construct. The measures reflect the period before people turned age 18 and indicated the extent to which (from *never* to *very often*) they had experienced sexual abuse (e.g., someone tried to touch me in a sexual way, someone made me do or watch sexual things), physical abuse (e.g., someone hit me so hard that it left me with bruises or marks, I believe I was physically abused), emotional abuse (e.g., I felt someone in my family hated me, I felt that my parents wished I had never been born), or neglect (e.g., my parents were too drunk or high to take care of me, nobody was there to protect me). One other question examined whether people had been maltreated in all 4 of these ways.

Psychosocial and psychological functioning measures. We used continuous scale measures adapted from well-known, previously-validated instruments. We used 14 items from the Brief Symptom Inventory (Derogatis, 1993) to assess respondents' number of depressive symptoms (Cronbach alpha = .92). Included among these were questions about feeling lonely even when in the presence of others, feeling blue, having a poor appetite, and experiencing thoughts of ending one's life. Answers were scored on a 5-point ordinal scale ranging from *not at all* to *extremely* in terms of how much each trait distressed the person during the past week. We used 12 items from the Ways of Coping Questionnaire (Folkman & Lazarus, 1988) to assess coping skills (Cronbach's alpha = .79). This included questions about as trying to keep busy to get one's mind off of things, going on as if nothing had happened, trying to make oneself feel better by using alcohol or other drugs, among others. Responses were based on the past 6 months and used a 4-point ordinal scale ranging from *never* to *often* to represent how often the person had employed each coping strategy during that time period.

We evaluated participants' level of paranoia using ten items from the Brief Symptom Inventory (Derogatis; Cronbach's alpha = .79). This scale measures feeling that something is wrong with one's mind, believing that one should be punished for one's sins, thinking that someone else can control one's thoughts, feeling that people cannot be trusted, and feeling that one is being watched or talked about by others. We assessed antisocial personality traits using 5 items from the Brief Symptom Inventory (Derogatis; Cronbach's alpha = .72). This construct

includes questions about having temper outbursts that one could not control, feeling tense or "keyed up," experiencing urges to harm someone, having urges to break things, and never feeling close to another person.

We used 10 true/false items from the Impulsive Sensation Seeking scale (Zuckerman, Kuhlman, Joireman, Teta, & Kraft, 1993) to measure impulsivity (Cronbach's alpha = .73). These included questions about doing things just for the thrill of it, willingness to try anything once, doing crazy things just for fun, and planning (or failing to plan) things in advance. Study participants' functionality or dysfunctionality of handling disagreements that arise was measured using 12 items from the Violence-Conflict Tactics Scale (Strauss, 1979; Cronbach's alpha = .84). This scale included questions about calmly discussing matters during arguments (healthy/functional), removing oneself from contentious situations (healthy/functional), insulting or threatening one's disagreement adversaries (unhealthy/dysfunctional), and harming one's argumentative foes (unhealthy/dysfunctional). Finally, level of post-traumatic stress disorder was measured using nine items from the Revised Civilian Mississippi Scale for PTSD (Vreven, Gudanowski, King, & King, 1995; Cronbach's alpha = .77). These items asked about the occurrence of feeling as if one could not go on, being frightened by one's urges, and being afraid to go to sleep at night during the past year.

Substance use. Seven items measured the amount of illegal drug use (continuous measure summing quantity-frequency of 12 drugs consumed during the preceding 30 days), amount of alcohol use (continuous measure representing quantity and frequency of using alcohol during the previous month), drug injector status (any injections vs. no injections during past 90 days), number of different drugs used during past month (continuous measure), drug treatment history (ever vs. never been in treatment), indirect sharing practices during past month (any sharing of cookers, cottons, or rinse water versus none), and syringe sharing practices during previous month (any sharing of syringes vs. none).

Analyses

We analyzed the data in two stages. In the first stage, we examined the bivariate relationships between the predictor variables and the dependent variable (the frequency of engaging in HIV-related sexual risk). We used *t*-tests when the independent variable was dichotomous in nature, ANOVA when the independent variable was ordinal with fewer than 5 response levels, and linear regression when the independent variable was a continuous measure.

In the second stage, we selected variables that were found to be related significantly (i.e., $p < .05$) or marginally (i.e., $.10 > p > .05$) to the dependent measure in for initial entry into a multiple regression equation. The marginally-significant items were included here to avoid overlooking potential masking effects. After initial entry into the multivariate equation, nonsignificant items were removed in stepwise fashion until a final "best fit" model was derived, consisting only of significant predictors. We

used both forward selection and backward elimination procedures to ensure that the order of entering items did not affect the final outcome. We report results as statistically significant whenever $p < .05$.

RESULTS

Table 2 provides information about the frequency with which the various types of sexual-risk behaviors comprising the dependent variable were reported. The two most commonly-reported types of sexual risk among members of this sample were having sex while under the influence of alcohol or drugs and having sex with a partner who was under the influence of alcohol or drugs. Almost all study participants admitted to engaging in these behaviors at least occasionally, and approximately one third of them said they engaged in them *almost always* or *always* when they had sex. The next most frequent sexual-risk behavior acknowledged by study participants was engaging in multiple partner sex (having sex with more than one person at the same time). Although more than half (61.5%) of the people taking part in the study said they never engaged in this behavior, 1.4% said this was something he/she did *sometimes* or *almost always*.

The next step in the analysis was to determine which of the independent measures (described earlier) were related to the frequency with which study participants engaged in sexual risk. Most of the demographic variables examined were found to be related to the frequency of having risky sex. Women engaged in risky sex more often than men ($p < .05$), and African Americans practiced risky sex more frequently than members of other racial/ethnic groups ($p < .001$). As age increased, so did the frequency of having risky sex ($p < .01$). Married participants reported somewhat more frequent risky sex than did their single, separated, divorced, and widowed counterparts ($p < .10$). We found an inverse relationship between educational attainment and frequency of sexual risk-taking ($p < .05$). Homeless people reported more frequent risky sex than those who were domiciled at the time of their interview ($p < .05$). Unemployed participants engaged in risky sex more frequently than those whose employment status was categorized in some way other than unemployed ($p < .05$).

Several childhood maltreatment measures were also related to the frequency with which people engaged in risky sex. For all measures for which differences were found, those experiencing maltreatment reported more

frequent risky sex than those who had not been maltreated. This was true with respect to physical abuse ($p < .01$), emotional abuse ($p < .05$), and neglect ($p < .001$), but not for sexual abuse (ns).

Many of the psychological and psychosocial functioning measures were also associated with the frequency of engaging in risky sexual relations. Greater levels of depression, paranoia, and post-traumatic stress disorder were all associated strongly with more frequent sexual risk-taking ($p < .001$). In addition, the more dysfunctionally people handled disagreements, the more often they practiced risky sex ($p < .01$). There was also a tendency for greater impulsivity to be associated with more frequent sexual risk ($p < .10$).

Finally, we examined the relationship between substance use/abuse and sexual risk-taking. Only one relationship was found to be statistically significant: the more illegal drug use people reported, the more often they said that they practiced risky sex ($p < .001$). For all other measures we examined, substance use was not related to the frequency with which people reported engaging in risky sex.

In the final step of our analyses, we entered variables found to be related to sexual risk taking frequency into a multivariate equation (see Table 3). Standardized regression coefficients (i.e., beta values) are provided to facilitate comparisons of the relative strength and importance of individual predictors. We present two competing models, as the order of selection or elimination of items affected the components retained in each model. Both models explain similar amounts of the total variance in the dependent measure (33.5% and 33.6%, respectively), and both contain four of the same predictors, as well as one or two unique predictors. In both models, ethnicity was a statistically-significant predictor of the frequency with which people reported having risky sex. African Americans engaged in more frequent sexual risk than their non-African American counterparts ($p < .05$ in both models). Age was also statistically significant in both equations, such that more frequent sexual risk was reported by the older persons in the study population than by their younger counterparts ($p < .05$ in Model 1, $p < .01$ in Model 2). Two other demographic characteristics, gender and homelessness, contributed meaningfully to Model 1. The data revealed that women reported more frequent sexual risk-taking than men ($p < .05$) and that homeless persons engaged in risky sexual relations more frequently than their domiciled counterparts ($p < .05$).

Table 2. Prevalence of Various Sexual Risk Behaviors

Sexual Risk Behavior	Never (%)	Rarely or Sometimes (%)	Almost Always or Always (%)
Had sex while high on alcohol or drugs	3.5	56.7	39.9
Had sex while partner was high on alcohol or drugs	9.8	60.8	29.4
Gave someone drugs, gifts, or money in order to purchase sex	84.6	13.3	2.1
Had sex in order to receive drugs	85.8	11.3	2.8
Had sex in order to receive money	86.5	8.5	5.1
Had sex with two or more persons at the same time	61.5	37.1	1.4
Had sex with someone who paid others to have sex with him/her	81.0	13.4	5.6

Table 3. Predictors of the Frequency of Having Risky Sex among New Drug Users

	Model 1 b (β)	Model 2 b (β)
Gender (female = 1)	0.20 (.17 *)	—
Age	0.02 (.21 *)	0.02 (.25 **)
Race (African American = 1)	0.26 (.19 *)	0.25 (.18 *)
Homeless	0.30 (.18 *)	—
Childhood Neglect	—	0.15 (.25 **)
Paranoia	0.22 (.26 ***)	0.22 (.26 ***)
Dysfunctionality of Handling Disagreements	0.57 (.25 ***)	0.41 (.18 *)
R-Squared	.335	.336

* $p < .05$ ** $p < .01$ *** $p < .001$

For psychological and psychosocial functioning, both models showed that level of paranoia and the extent of functionality/dysfunctionality of handling disagreements are relevant to understanding new drug users' involvement in risky sex. The more paranoid people were, the more often they tended to have risky sexual relations ($p < .001$ in both models). The more dysfunctional they were in their dispute resolution techniques/approaches, the greater their frequency of sexual risk taking tended to be ($p < .001$ for Model 1, $p < .05$ for Model 2).

Finally, Model 2 contained one of the childhood maltreatment measures. It showed that the more neglect people reported experiencing prior to adulthood, the more frequently they tended to engage in risky sex as adults ($p < .01$).

DISCUSSION

One of the noteworthy findings of this research is that among new drug users in this sample, the extent to which they used drugs was related to their involvement in HIV-related sexual-risk behaviors when other factors of greater salience (e.g., age, race, psychological functioning) were taken into account. Although the amount of illegal drug use was associated positively with their frequency of sexual risk taking in bivariate analyses, this relationship was not maintained when the variable was entered into the multivariate analysis we conducted. We found this surprising, particularly in light of the relationship between drug use and HIV-related sexual risk that has been well-documented (Hoffman et al., 2000; Liebman, Mulia, & McIlvaine, 1992). It may be that it is not merely drug use that heightens the overall frequency of sexual risk-taking, but rather, that the extent to which people experience drug addiction or problems from their substance use/abuse affects their overall behavioral risk.

Other research has shown an association between the degree or intensity of drug dependency and the number of HIV risks taken by participants (Elifson, Klein & Sterk, 2004; Gossop, Griffiths, Powis, & Strang, 1993a, 1993b; Morrill et al., 2001). Applied to this study's findings, it seems possible that the relationship between drug use and HIV sexual risk may not be entrenched enough or sufficiently well-established among new drug users compared to those whose drug use behaviors have been occurring for

a longer period of time. As such, their drug use is not causing them to engage in increasingly frequent sexual risk-taking. With continued drug use and the advancing dependency that typically follows such use, it seems likely that the relationship between drug use and level of HIV risk would become strengthened. This highlights the importance of early intervention for drug users, so their drug use can be curtailed, if not eliminated altogether, before it begins to have detrimental effects on their lives (DeWit, Offord, & Wong, 1997; Vines & Mandell, 1999; Worner & Delgado, 1995).

This study is noteworthy for other intervention-related implications as well. For example, we discovered that African Americans were engaging in more frequent risky sex than their non-African American counterparts. This finding is consistent with national trends showing higher-than-average rates of HIV infection and AIDS diagnoses among African Americans compared to members of other ethnic groups (Centers for Disease Control and Prevention, 2004), as well as published reports suggesting that African Americans engage in higher rates of risky behaviors than their counterparts of other backgrounds (Holtzman, Bland, Lansky, & Mack, 2001; Logan & Leukefeld, 2000; Somlai et al., 2003). These findings highlight the need to develop HIV interventions targeting African Americans, and in the case of the current study, African American drug users who have initiated drug use recently. It is crucial that these intervention programs are designed to be creative, innovative, and culturally-appropriate, as previous research has demonstrated that African Americans, and particularly African American women, tend to fare more poorly in HIV intervention programs than other gender and ethnic groups (Mize, Robinson, Bockting, & Scheltema, 2002).

We also found that older adults engaged in more frequent sexual risk than their younger counterparts. Developing and implementing age-specific or age-appropriate HIV interventions would, therefore, seem worthwhile. Many researchers have commented on the benefits of and the continued need for HIV intervention projects to target specific age groups (Carneiro et al., 1999; Donisi et al., 1998; Kennedy, Mizuno, Hoffman, Baume, & Strand, 2000; Richard, Bell, & Montoya, 2000; Strombeck & Levy, 1998). Programs designed to help adults in the age bracket designated as "older" in this study might focus on issues such as enhancing partner communication, introducing condom use into an existing relationship, negotiating condom use with a reluctant partner, fidelity and infidelity in a relationship, and the myriad benefits of entering drug treatment, since these issues are likely to be salient to "older" adults' lives, to the HIV-related risk practices in which they engage, and to the risk-reduction decisions they make.

Our study also revealed that psychological and psychosocial functioning were relevant to understanding the extent to which new drug users engaged in sexual risk-taking. First, the more paranoid people were in general, the

more often they reported practicing risky sex. This finding is consistent with research by Grassi and colleagues (2002) that showed that paranoia levels were higher among hepatitis C-infected drug injectors compared to those who were not infected. The mechanism of these relationships is unclear to us. Whether there is something inherent in experiencing greater levels of paranoia that heightens people's likelihood of engaging in HIV risk behaviors, or whether the greater involvement in risky practices heightens people's levels of paranoia, or both, is an unanswered (and with our data, unaddressable) question that future researchers should examine.

Second, we discovered that the more dysfunctional people's style of handling disagreements was, the more often they tended to engage in sexual risk. We believe this finding may be a reflection of the relationship between overall partner communication and HIV risk. It has been shown that female drug users who engage in more communication with their sexual and dating partners tend to have lower rates of HIV risk than those whose partner communication was less consequential (Klein, Elifson, & Sterk, 2004). Good communication, bargaining, and conflict resolution skills can play a very powerful role in helping people reduce their risk for HIV (El-Bassel et al., 2001; Molitor, Facer, & Ruiz, 1999; Somlai et al., 1998). These studies and the current research suggest that teaching people how to communicate more consistently and effectively with their sexual and drug-using partners may be an important way of helping them to reduce their HIV risk practices. Coinciding with this, our findings suggest that it would be worthwhile to help new drug users learn to handle their anger more effectively. Improving anger management seems more important in light of published research documenting a link between domestic violence, intimate partner violence, and threats of such violence and actual HIV risk practices (El Bassel, Gilbert, Rajah, Foleno, & Frye, 2000; Gielen, McDonnell, & O'Campo, 2002; Wu, El-Bassel, Witte, Gilbert, & Chang, 2003).

We found that three other variables – gender, homelessness, and childhood neglect – contribute to the frequency of sexual risk-taking, either in Model 1 or in Model 2. Regarding gender, we discovered that women reported engaging in sexual risk more often than men. This probably results from power and relationship-control issues that place men in a better position than women to determine the course of their sexual practices. In many sexual relationships, for example, men have more “say” regarding the use or nonuse of condoms than women do. As another example, in their drug use practices, many women – and not nearly as many men – find themselves providing sexual services in exchange for drugs or the money to buy drugs. As a result of these gender imbalances in power and control, many drug-using women find themselves at a disadvantage when it comes to their involvement in sexual-risk behaviors. Accordingly, HIV intervention programs should provide targeted services to women. Such programs would be well-advised to develop gender-specific approaches to cur-

tailoring risky behaviors. Gender-specific HIV interventions, including some focusing specifically on drug-using populations, have been implemented effectively by other practitioners (Ehrhardt et al., 2002; Melendez, Hoffman, Exner, Leu, & Ehrhardt, 2003; Theall, Sterk, & Elifson, 2003).

We also discovered that sexual risk was undertaken among homeless persons more often than among those with stable residences. Many factors probably contribute to this. First, the lack of financial resources prevents sexually-active homeless people from purchasing condoms. Second, engaging in “subsistence sex” (i.e., having sex in order to obtain money or food or drugs or shelter) is likely to be more common among homeless people than among those who are not homeless. Third, greater substance use and abuse among homeless persons when compared to their domiciled counterparts probably contributes to their tendency to be involved in risky practices. Regardless of the reason(s) underlying the finding, ours is not the first study to indicate greater HIV-risk practices among homeless persons (i.e., Logan & Leukefeld, 2000; Roberts et al., 2003; St. Lawrence & Brasfield, 1995). Consequently, homeless people, particularly those who recently began using drugs, constitute a high-risk group needing both social services to help them overcome their homelessness and targeted HIV intervention and educational efforts to help them find ways to reduce their risk practices.

Finally, we found that the more childhood neglect people had experienced during their formative years, the more frequently they practiced risky sex as adults. Many studies have documented a link between childhood maltreatment and adulthood involvement in behaviors that can place people at risk for contracting HIV (Bensley et al., 2000; Morrill et al., 2001), although very little research has focused on the long-term effects of childhood neglect as distinct from those of sexual abuse, physical abuse, or emotional abuse. In research with different samples, we have demonstrated the relevance of childhood neglect to HIV-related beliefs, attitudes, and risk practices in adulthood (Klein et al., 2002; Sterk, Klein, & Elifson, 2004). Survivors of childhood neglect comprise a high-risk group for the acquisition of HIV and, on that basis, should be targeted for specialized intervention programs. Although identifying such people may seem to be an obstacle to conducting such an intervention, in truth, a screening instrument need only include a few questions to elicit whether or not the person being interviewed did or did not experience neglect during his/her childhood or adolescent years.

Limitations

Our research has a few potential limitations. First, the data collected as part of Project TRENDS were all based on uncorroborated self-reports. Therefore, the extent to which respondents over- or under-reported their involvement in risky behaviors is unknown. In all likelihood, the self-reported data are valid, as numerous researchers have noted that their participants (which, like the current study,

have included substance abusers) have provided accurate information about their behaviors (Anglin, Hser, & Chou, 1993; Higgins et al., 1995; Jackson, Covell, Frisman, & Essock 2004; Nurco, 1985).

A second limitation pertains to recall bias. Respondents were asked to report about their beliefs, attitudes, and behaviors during the past 30 days, the past 90 days, or the past year, depending upon the measure in question. We chose these time frames (a) to incorporate enough time in the risk-behavior questions, to facilitate meaningful variability from person to person and (b) to minimize recall bias. The extent to which recall bias affected the data cannot be assessed, although other researchers collecting data similar to that captured in Project TRENDS have reported that recall bias is sufficiently minimal that its impact upon study findings is likely to be small (Jaccard & Wan, 1995).

A third limitation of these data comes from the sampling strategy used. All interviews were conducted in the Atlanta, Georgia, metropolitan area. There may be local or regional influences or subcultural differences between these people and those residing elsewhere that could affect the generalizability of the data. Additionally, the chain-referral sampling approach used to identify study participants is not a random sampling strategy, and there may be inherent biases in who was or was not identified as potential study participants (Heckathorn, 1997).

Finally, there are numerous ways in which a "new user" could be defined, only one of which was used in this research. For example, some scholars might prefer a narrower definition, limiting "new users" to people who initiated drug use within the past 1-2 years. We opted for the past-5-years criterion for two reasons. First, this is how most of the previously-published studies focusing on new and recent drug users operationalized the term. Second, it allowed us to utilize a sufficient sample size so as to facilitate data analysis. Additionally, in this study, only new users of heroin or methamphetamine were considered, as the use of these emergent drugs on the Atlanta drug scene was the focal point for the parent study from which the current research comes. It is likely that new users of other drugs, such as marijuana or cocaine or crack, differ from new users of heroin and methamphetamine. How, if at all, such differences may have affected the outcomes we obtained is unknown and unassessable. Future researchers should try to locate new users of as many different drugs as possible, so that their research represents a broad array of new drug users.

Conclusion

This research has shown that, first, among new drug users, drug use may not be the principal factor accounting for involvement in HIV-related risk-behaviors. We also found that in this sample, African Americans were engaging in more frequent sexual risk than were their non-African American counterparts. This is consistent with recent national HIV trends and highlights the need to provide culturally-appropriate tailored interventions to the African

American community, particularly to members who recently began using drugs. Third, we discovered that older adults reported more frequent sexual risk-taking than their younger counterparts. This not only highlights the need to provide age-specific interventions to help curtail the spread of HIV, but also emphasizes the need to pay attention to the risk behaviors of adults who remain sexually active despite being older than their "peak years" of sexual activity.

Fourth, we found that among our population of new drug users, psychological/psychosocial functioning was highly relevant to HIV risk. Although some researchers have found associations between psychological/psychosocial functioning and HIV risk, this is an area that has been subjected to relatively little study and even less programmatic intervention. It is an area well worth exploring in future projects, particularly those providing individual-level HIV risk reduction interventions. Fifth, we observed that women reported engaging in more frequent sexual risk than men. With rising rates of HIV infection among women being seen in the United States in recent years, and with corresponding increases in the heterosexual sexual transmission of HIV, this finding is particularly important because of its implications for the need to find creative ways to reach women with HIV-related prevention and educational messages.

Sixth, we discovered that new drug users who were homeless were practicing sexual risk behaviors more often than their domiciled peers. Often overlooked even by community-based HIV intervention programs, homeless people represent a population in need of targeted outreach. For them, in particular, exigent needs must be taken into account when providing HIV-prevention messages, since traditional recommendations, such as purchasing condoms, may not be feasible due to economic challenges. Finally, we found that new drug users who had experienced childhood neglect were at greater risk for contracting HIV than were those who had not been neglected. The main implication of this is that neglect constitutes a risk factor for risk-taking much later in life, particularly if residual emotional issues are not addressed through counseling. Helping survivors of childhood neglect to get the therapy they need may translate into reduced HIV risk in this population.

REFERENCES

- Ajzen, I. (1985). From intention to actions: A theory of planned behavior. In J. Kuhl & J. Beckmann (Eds.). *Action-control: From cognition to behavior* (pp. 11-39). Heidelberg: Springer.
- Ajzen, I. (1988). *Attitudes, personality, and behavior*. Chicago: Dorsey Press.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211.
- Ajzen, I. & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice Hall.
- Anglin, M. D., Hser, Y., & Chou, C. (1993). Reliability and validity of retrospective behavioral self-report by narcotics addicts. *Evaluation Review*, 17, 91-103.
- Bensley, L. S., Eenwyk, J. V., & Simmons, K. W. (2000). Self-reported childhood sexual and physical abuse and adult HIV-risk behaviors and

- heavy drinking. *American Journal of Preventive Medicine*, 18, 151–158.
- Bernstein, D. P., Fink, L., Handelsman, L., Foote, J., Lovejoy, M., Wenzel, K., et al. (1994). Initial reliability and validity of a new retrospective measure of child abuse and neglect. *American Journal of Psychiatry*, 151, 1,132–1,136.
- Boeri, M., Sterk, C. E., & Elifson, K. W. (2006). Baby boomer drug users: Career phases, social control, and social learning theory. *Sociological Inquiry*, 76, 264–291.
- Carneiro, M., Fuller, C., Doherty, M. C., & Vlahov, D. (1999). HIV prevalence and risk behaviors among new initiates into injection drug use over the age of 40 years old. *Drug and Alcohol Dependence*, 54, 83–86.
- Centers for Disease Control and Prevention (2004). *HIV/AIDS surveillance report*, 14, 1–40.
- Deren, S., Coyle, S., Singer, M., Kang, S. Y., & Beardsley, M. (2001). HIV risk behaviors among injection drug users in low, medium, and high seroprevalence communities. *AIDS and Behavior*, 5, 45–50.
- Derogatis, L. R. (1993). *BSI Brief Symptom Inventory: Administration, scoring and procedures manual*. Minneapolis, MN: National Computers System, Inc.
- DeWit, D. J., Offord, D. R., & Wong, M. (1997). Patterns of onset and cessation of drug use over the early part of the life course. *Health Education and Behavior*, 24, 746–758.
- Doherty, M. C., Garfein, R. S., Monterroso, E., Brown, D., & Vlahov, D. (2000). Correlates of HIV infection among young adult short-term injection drug users. *AIDS*, 14, 717–726.
- Donisi, A., Tomasoni, D., Ripamonti, D., Milini, P., Palvarini, L., Cattane, A., et al. (1998). Changing patterns of HIV transmission and better targeting for intervention strategies. *International Journal of STD and AIDS*, 9, 740–743.
- Ehrhardt, A. A., Exner, T. M., Hoffman, S., Silberman, I., Leu, C. S., Miller, S., et al. (2002). A gender-specific HIV/STD risk reduction intervention for women in a health care setting: Short- and long-term results of a randomized clinical trial. *AIDS Care*, 14, 147–161.
- El-Bassel, N., Gilbert, L., Rajah, V., Folen, A., & Frye, V. (2000). Fear and violence: Raising the HIV stakes. *AIDS Education and Prevention*, 12, 154–170.
- El-Bassel, N., Witte, S. S., Gilbert, L., Sormanti, M., Moreno, C., Pereira, L., et al. (2001). HIV prevention for intimate couples: A relationship-based model. *Family Systems and Health*, 19, 379–395.
- Elifson, K. W., Klein, H., & Sterk, C. E. (2004). Drug problems and “at risk” women’s involvement in HIV risk behaviors. *Social and Preventive Medicine*, 49, 198–207.
- Fennema, J. S. A., van Ameijden, E. J. C., van den Hoek, A., & Coutinho, R. A. (1997). Young and recent-onset injecting drug users are at higher risk for HIV. *Addiction*, 92, 1,457–1,465.
- Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.
- Folkman, S., & Lazarus, R. S. (1988). *Ways of Coping Questionnaire: Research edition*. Palo Alto, CA: Consulting Psychologists Press.
- Gielen, A. C., McDonnell, K. A., & O’Campo, P. J. (2002). Intimate partner violence, HIV status, and sexual risk reduction. *AIDS and Behavior*, 6, 107–116.
- Glaser, B., & Strauss, A. (1967). *The discovery of grounded theory: Strategies for qualitative research*. New York: Aldine de Gruyter.
- Gossop, M., Griffiths, P., Powis, B., & Strang, J. (1993a). Severity of heroin dependence and HIV risk. I. Sexual behavior. *AIDS Care*, 5, 149–157.
- Gossop, M., Griffiths, P., Powis, B., & Strang, J. (1993b). Severity of heroin dependence and HIV risk. II. Sharing injection equipment. *AIDS Care*, 5, 159–168.
- Grassi, L., Satriano, J., Serra, A., Biancosino, B., Zotos, S., Sighinolfi, L., et al. (2002). Emotional stress, psychosocial variables and coping associated with hepatitis C virus and human immunodeficiency virus infections in intravenous drug users. *Psychotherapy and Psychosomatics*, 71, 342–349.
- Heckathorn, D. D. (1997). Respondent-driven sampling: A new approach to the study of hidden populations. *Social Problems*, 44, 174–199.
- Higgins, S.T., Budney, A. J., Bickel, W. K., Badger, G. J., Foerg, F. E., et al. (1995). Outpatient behavioral treatment for cocaine dependence: One-year outcome. *Experimental and Clinical Psychopharmacology*, 3, 205–212.
- Hoffman, J. A., Klein, H., Eber, M., & Crosby, H. (2000). Frequency and intensity of crack use as predictors of women’s involvement in HIV-related sexual risk behaviors. *Drug and Alcohol Dependence*, 58, 227–236.
- Holtzman, D., Bland, S. D., Lansky, A., & Mack, K. A. (2001). HIV-related behaviors and perceptions among adults in 25 states: 1997 behavioral risk factor surveillance system. *American Journal of Public Health*, 91, 1,882–1,888.
- Jaccard, J., & Wan, C. K. (1995). A paradigm for studying the accuracy of self-reports of risk behavior relevant to AIDS: Empirical perspectives on stability, recall bias, and transitory influences. *Journal of Applied Social Psychology*, 25, 1,831–1,858.
- Jackson, C. T., Covell, N. H., Frisman, L. K., & Essock, S. M. (2004). Validity of self-reported drug use among people with co-occurring mental health and substance use disorders. *Journal of Dual Diagnosis*, 1, 49–63.
- Johnson, M. E., Brems, C., Wells, R. S., Theno, S. A., & Fisher, D. G. (2003). Comorbidity and risk behaviors among drug users not in treatment. *Journal of Addictions and Offender Counseling*, 23, 108–117.
- Kaplan, C., Korf, D., & Sterk, C. (1986). Temporal and social context of heroin-using populations: An illustration of the snowball sampling technique. *Journal of Nervous and Mental Diseases*, 175, 566–574.
- Kennedy, M. G., Mizuno, Y., Hoffman, R., Baume, C., & Strand, J. (2000). The effect of tailoring a model HIV prevention program for local adolescent target audiences. *AIDS Education and Prevention*, 12, 225–238.
- Klein, H., Elifson, K. W., & Sterk, C. E. (2004). Partner communication and HIV risk behaviors among “at risk” women. *Social and Preventive Medicine*, 49, 198–207.
- Klein, H., Elifson, K., Sterk, C., & Theall, K. (2002). *Childhood neglect and adulthood involvement in sexual and HIV-related risk behaviors*. Paper presentation at the annual meeting of the American Sociological Association, Chicago, August 16–20.
- Kuebler, D., Hausser, D., & Gervasoni, J. P. (2000). The characteristics of “new users” of cocaine and heroin unknown to treatment agencies: Results from the Swiss Hidden Population Study. *Addiction*, 95, 1,561–1,571.
- Kwiatkowski, C. F., & Booth, R. E. (2000). Differences in HIV risk behaviors among women who exchange sex for drugs, money or both drugs and money. *AIDS and Behavior*, 4, 233–240.
- Liebman, J., Mulia, N., & McIlvaine, D. (1992). Risk behavior for HIV infection of intravenous drug users and their sexual partners recruited from street settings in Philadelphia. *Journal of Drug Issues*, 22, 867–884.
- Logan, T. K., & Leukefeld, C. (2000). Sexual and drug use behaviors among female crack users: A multi-site sample. *Drug and Alcohol Dependence*, 58, 237–245.
- Longshore, D., Anglin, M. D., Hsieh, S. C., & Annon, K. (1993). Sexual behaviors and cocaine preference among injection drug users in Los Angeles. *Journal of Drug Issues*, 23, 363–374.
- Melendez, R. M., Hoffman, S., Exner, T., Leu, C. S., & Ehrhardt, A. A. (2003). Intimate partner violence and safer sex negotiation: Effects of a gender-specific intervention. *Archives of Sexual Behavior*, 32, 499–511.
- Mize, S. J. S., Robinson, B. E., Bockting, W. O., & Scheltema, K. E. (2002). Meta-analysis of the effectiveness of HIV prevention interventions for women. *AIDS Care*, 14, 163–180.
- Molitor, F., Facer, M., & Ruiz, J. D. (1999). Safer sex communication and unsafe sexual behavior among young men who have sex with men in California. *Archives of Sexual Behavior*, 28, 335–343.
- Morrill, A. C., Kasten, L., Urato, M., & Larson, M. J. (2001). Abuse, addiction, and depression as pathways to sexual risk in women and men with a history of substance abuse. *Journal of Substance Abuse*, 13, 169–184.
- National Institute on Drug Abuse (2001). Epidemiologic trends in drug abuse advance report, December 2000. *Community Epidemiology Work Group meeting summary*. Rockville, MD: National Institutes of Health.
- Newcomb, M. D., Wyatt, G. E., Romero, G. J., Tucker, M. B., Wayment, H. A., Carmona, J.V., et al. (1998). Acculturation, sexual risk taking, and HIV health promotion among Latinas. *Journal of Counseling Psychology*, 45, 454–467.
- Nurco, D. N. (1985). *A discussion of validity: Self-report methods of estimating drug use*. NIDA Research Monograph #57. U.S. Government Printing Office, Washington, DC.

- Richard, A. J., Bell, D. C., & Montoya, I. D. (2000). Age and HIV risk in a national sample of injecting drug and crack cocaine users. *Substance Use and Misuse, 35*, 1,385–1,404.
- Roberts, A. C., Wechsberg, W. M., Zule, W., & Burroughs, A. R. (2003). Contextual factors and other correlates of sexual risk of HIV among African American crack-abusing women. *Addictive Behaviors, 28*, 523–536.
- Rosenstock, I.M., Strecher, V. J., & Becker, M. H. (1988). Social learning theory and the health belief model. *Health Education Quarterly, 15*, 175–183.
- Rosenstock, I. M., Strecher, V. J., & Becker, M. H. (1994). The health belief model and HIV risk behavior change. In R.J. DiClemente (Ed.), *Preventing AIDS: Theories and methods of behavioral interventions*. New York: Plenum Press.
- Schroeder, K. E. E., Hobfoll, S. E., Jackson, A. P., & Lavin, J. (2001). Proximal and distal predictors of AIDS risk behaviors among inner-city African American and European American women. *Journal of Health Psychology, 6*, 169–190.
- Smereck, G. A. D., & Hockman, E. M. (1998). Prevalence of HIV infection and HIV risk behaviors associated with living place: On-the-street homeless drug users as a special target population for public health intervention. *American Journal of Drug and Alcohol Abuse, 24*, 299–319.
- Somlai, A. M., Kelly, J. A., Heckman, T. G., Hackl, K., Runge, L., & Wright, C. (2000). Life optimism, substance use, and AIDS-specific attitudes associated with HIV risk behavior among disadvantaged inner-city women. *Journal of Women's Health and Gender-Based Medicine, 9*, 1,101–1,111.
- Somlai, A. M., Kelly, J. A., McAuliffe, T. L., Gudmundson, J. L., Murphy, D. A., Sikkema, K. J., et al. (1998). Role play assessments of sexual assertiveness skills: Relationships with HIV/AIDS sexual risk behavior practices. *AIDS and Behavior, 2*, 319–328.
- Somlai, A. M., Kelly, J. A., McAuliffe, T. L., Ksobiech, K., & Hackl, K. L. (2003). Predictors of HIV sexual risk behaviors in a community sample of injection drug-using men and women. *AIDS and Behavior, 7*, 383–393.
- St. Lawrence, J. S., & Brasfield, T. L. (1995). HIV risk behavior among homeless adults. *AIDS Education and Prevention, 7*, 22–31.
- Sterk, C. (1999). Building bridges: Community involvement in HIV and substance abuse research. *Drugs and Society, 14*, 107–121.
- Sterk, C. E., Elifson, K. W., & German, D. (2000). Female crack users and their sexual relationships: The role of sex-for-crack exchanges. *The Journal of Sex Research, 37*, 354–360.
- Sterk, C. E., Klein, H., & Elifson, K. W. (2004). Predictors of condom-related attitudes among at-risk women. *Journal of Women's Health, 13*, 668–680.
- Sterk, C. E., Theall, K. P., & Elifson, K. W. (2003). Effectiveness of a risk-reduction intervention among African American women who use crack cocaine. *AIDS Education and Prevention, 15*, 15–32.
- Sterk, C. E., Theall, K. P., Elifson, K. W., & Kidder, D. (2003). HIV risk reduction among African-American women who inject drugs: A randomized controlled trial. *AIDS and Behavior, 7*, 73–86.
- Stoskopf, C. H., Kim, Y. K., & Glover, S. H. (2001). Dual diagnosis: HIV and mental illness, a population-based study. *Community Mental Health Journal, 37*, 469–479.
- Straus, M.A. (1979). Measuring intrafamily conflict and violence: The Conflict Tactics (CT) scales. *Journal of Marriage and the Family, 41*, 75–88.
- Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory process and techniques*. Newbury Park, CA: Sage Publications.
- Strombeck, R., & Levy, J. A. (1998). Educational strategies and interventions targeting adults age 50 and older for HIV/AIDS prevention. *Research on Aging, 20*, 912–936.
- Tashima, N., Crain, S., O'Reilly, K., & Sterk-Elifson, C. (1996). The community identification process: A discovery model. *Qualitative Health Research, 6*, 23–48.
- Theall, K. P., Sterk, C. E., & Elifson, K. W. (2003). Male condom use by type of relationship following an HIV intervention among women who use illegal drugs. *Journal of Drug Issues, 33*, 1–28.
- Vines, J. A., & Mandell, C. J. (1999). Characteristics of female alcohol and drug substance users engaged in treatment programs. *Journal of Applied Rehabilitation Counseling, 30*, 35–43.
- Vreven, D. L., Gudanowski, D. M., King, L. A., & King, D. W. (1995). The civilian version of the Mississippi PTSD scale: A psychometric evaluation. *Journal of Traumatic Stress, 9*, 91–109.
- Wayment, H. A., Wyatt, G. E., Tucker, M. B., Romero, G. J., Carmona, J. V., Newcomb, M., et al. (2003). Predictors of risky and precautionary sexual behaviors among single and married White women. *Journal of Applied Social Psychology, 33*, 791–816.
- Wingood, G. M., & DiClemente, R. J. (1998). The influence of psychosocial factors, alcohol, drug use on African American women's high-risk sexual behavior. *American Journal of Preventive Medicine, 15*, 54–59.
- Worner, T. M., & Delgado, I. M. (1995). Women referred for treatment: Early versus traditional intervention. *Substance Abuse, 16*, 39–47.
- Wu, E., El-Bassel, N., Witte, S. S., Gilbert, L., & Chang, M. (2003). Intimate partner violence and HIV risk among urban minority women in primary health care settings. *AIDS and Behavior, 7*, 291–301.
- Zuckerman, M., Kuhlman, D. M., Joireman, J., Teta, P., & Kraft, M. (1993). A comparison of three structural models for personality: The big three, the big five, and the alternative five. *Journal of Personality and Social Psychology, 65*, 757–768.
- Zule, W. A., & Desmond, D. P. (1999). An ethnographic comparison of HIV risk behaviors among heroin and methamphetamine injectors. *American Journal of Drug and Alcohol Abuse, 25*, 1–23.