Gender Differences in Social Network Influence among Injection Drug Users: Perceived Norms and Needle Sharing

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ABSTRACT *Whereas substantial research has linked perceived norms and HIV sexual risk behavior, less attention has been given to the relationship between perceived norms and injection drug practices. This study investigated the relationship between needle sharing and perceived norms in a sample of injection drug users. Data were collected through face-to-face interviews with 684 injectors from the STEP Into Action (STEP) project in Baltimore, Maryland. Logistic regression was used to assess the associations between perceived norms (descriptive and injunctive norms) and needle sharing. Results were stratified by gender. Descriptive norms were significantly related to needle sharing among males (AOR=1.58, 95%CI=1.20–2.40) and females (AOR=1.78; 95%CI=1.24–2.55). Whereas injunctive norms were significantly associated with needle sharing among men (AOR=1.30 95%CI=1.05–1.61), this association was not significant among women (AOR=0.99; 95%CI=0.74–1.31). These findings suggest the utility of peer education interventions that promote norms regarding risk reduction among injection drug users. The data also provide support for gender-specific HIV prevention interventions.*

KEYWORDS *Perceived norms, Social networks, Gender, HIV/AIDS, Peer education*

INTRODUCTION

Injection drug users (IDUs) are at risk for HIV from sharing injection equipment such as needles and syringes.¹ IDUs may also transmit HIV to their sex partners. To understand and alter risk behaviors among IDUs, researchers have assessed the social-psychological correlates of risk, including the role of social networks in influencing risk behaviors.^{2–4}

Social networks may influence behavior through several mechanisms including proximity in social space and differential affiliation with individuals who practice similar behaviors.^{5,6} Social influence also occurs through the development, establishment, and maintenance of norms. Thus, social networks may influence our behavior directly, as well as indirectly, through our perceptions, such as perceived norms.

Psychological studies by Asch and Sherif demonstrated that individual behavior is shaped and influenced by others in their social environment.^{7,8} Hyman proposed

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that by observing other people (called reference groups) and evaluating their behavior, perceived norms about appropriate behaviors begin to develop.⁹ Festinger's Social Comparison Theory extended the concept of reference groups.¹⁰ According to this theory, individuals not only look at the behaviors of others as a guide, they compare their own behaviors and act accordingly. These theories indicate that through the observance of others' behavior and comparing our own actions, norms about which behaviors are appropriate for a given social environment may emerge. Furthermore, these observations and comparisons may be more influential if individuals perceive that members of the reference group are similar to them.

The present study focused on perceived norms, which refer to an individual's interpretation of group-level or social norms.¹¹ Perceived norms have been classified as descriptive or injunctive norms.¹² Descriptive norms indicate the perceived prevalence of a behavior in a group whereas injunctive norms refer to perceived approval of a behavior. Perceived norms are related to the adoption of many health-related behaviors including adolescent drug use, college student alcohol consumption, and eating behaviors.¹³⁻¹⁵

Perceived Norms and HIV Risk Behavior

Whereas there are many published studies examining the relationship between perceived norms and risky sex behaviors, less attention has been given to the association between perceived norms and injection practices.¹⁶⁻¹⁸ Using a mixed-method approach, Friedman et al. conducted an exploratory assessment of the relationship between IDU behaviors and the behaviors of their drug acquaintances.¹⁹ The results indicated significant unadjusted relationships between participants' and acquaintances' needle sharing and use of cleaned or sterile needles.

Subsequent research has shown that perceived norms influence injection behavior. However, there are several limitations of the published literature. Extant studies of perceived norms have used a range of referent groups including peers, sex partners, and "people who are important." Magura et al. found that IDUs who reported that their peers injected drugs were more likely to report needle sharing.²⁰ The authors concluded that having peers who inject establishes an environment conducive to sharing. However, as their measure of perceived norms focused on both friends' and sex partners' behaviors, this study does not provide any evidence that friend influence differed from sex partner influence.

Applying the Theory of Reasoned Action (TRA) framework, many researchers have measured perceived norms held by "most people" or "most people who are important to me" through the construct subjective norm.²¹ In a descriptive study of HIV positive injectors, Fisher et al. reported that the majority of their IDU sample believed that "most people who are important to me" thought they should not share needles without cleaning them with bleach first.²² Likewise, Jamner et al. found that needle cleaning was associated with the belief that "most people who are important to me think I should clean my needles."²³

The influence of perceived norms may vary according to the relationship and similarity between the individual and others. Furthermore, individuals are most influenced by others who they feel have similar attitudes and behaviors.^{10,24} Thus, drug users may be more persuaded by perceived norms asserted from their drug using partners who they perceive as similar compared to family members or nondrug using sex partners.

Another weakness of the norms literature is that researchers often measure perceived norms through a single item or a few questions. This tendency raises

questions about the reliability of the measures. For example, Bailey et al. assessed injunctive perceived norms through a single item—agreement with the following statement “People I inject with think you should never use a needle if someone else has used it before.”²⁵ Also, Thiede et al. measured descriptive norms simply as the proportion of IDU friends who shared drug paraphernalia.²⁶ There are several dimensions of norms that may affect their influence. Some norms may be explicitly stated whereas others may be more implicit. Moreover, there may be varying levels of acceptance and sanctioning of behaviors. Violating one norm may not be perceived as important as violating other norms—drug users may believe that sharing needles with a sex partner is more acceptable than sharing needles with a stranger. By limiting measurement to a few items, several dimensions of the behavioral norms may not be captured and researchers may not distinguish between different types of normative influence—descriptive and injunctive.

A few studies have shown a difference in the type of normative influence and HIV risk behavior. Among IDUs attending a short-term detoxification clinic, Zapka et al. examined the association between IDU risk reduction with a series of descriptive and injunctive norms.²⁷ At baseline, increased bleaching was associated with higher number of friends who bleached (descriptive norm) whereas believing that more people share equipment and fewer people bleach was associated with less bleaching. These investigators also found that risk reduction was positively associated with increased disapproval (i.e., injunctive norms) about safer injection.

In a cross-sectional study, Hawkins et al. examined the influence of perceived peer behavior (descriptive norms) and peer encouragement (injunctive norms) on IDU needle sharing and needle cleaning behaviors.²⁸ The researchers found that perceived peer behavior, specifically reporting that peers cleaned needles, was significantly associated with increased needle cleaning and decreased needle sharing among both males and females. On the other hand, peer encouragement to clean needles had differential effects on IDU behavior. Among males, peer encouragement was associated with increased needle sharing and not associated with needle cleaning. Among females, peer encouragement was not associated with needle sharing or needle cleaning.

The present study examines the relationship between perceived norms and risk behavior among injection drug users. This study addresses some of the limitations of existing literature. First, we assessed the relationship between needle sharing and each type of perceived norms separately among male and female injection drug users. Next, we used a multi-item index to achieve a more reliable and comprehensive measurement of perceived norms. Finally, we limited our analysis to norms among drug partners, the group of people who appear to be most influential on another’s drug-using practices.^{29,30}

Gender Differences in Injection Drug Use

The social context surrounding needle sharing is often different between men and women. For instance, women are more likely to share needles with a sex partner who injects whereas men go to and share needles more often at a shooting gallery compared to women. As the context often varies, factors influencing risky behaviors may vary by gender.^{31,32}

Whereas research on gender differences in descriptive and injunctive norms among IDUs is scarce, several studies examining the role of perceived norms in sexual behavior has indicated that normative influence varies by gender. Buunk et al. reported that descriptive norms predicted intention to use condoms for male and

female heterosexual adults.³³ However, injunctive norms were significant among women but not men. Mizuno et al. found that whereas injunctive norms were persuasive for males, they were not associated with condom use among females.³⁴ The researchers offered that males may be more influenced by perceived approval among peers. On the other hand, females are more observant of their environment, thus making them more focused on the behaviors of others.

The perceived norms-relationship may vary by behavior, as norms may be influenced by a variety of situational factors including the number of people present, setting, and the context. Thus, research is needed to determine if the findings from research on sex behaviors are similar for injection drug behaviors.

METHODS

Data were collected from participants in the STEP into Action (STEP) project in Baltimore, Maryland. The STEP project is an HIV risk reduction intervention designed to promote peer education among injection drug users and their social network members.

Participants were recruited through targeted street outreach in areas with high levels of drug activity in Baltimore, Maryland. Interested individuals were instructed to call a toll-free phone number to undergo a brief screening assessment. Individuals were eligible if they met the following criteria: (1) 18 years or older; (2) Baltimore City resident; (3) willingness to introduce a social network member to the study and talk to them about HIV prevention; (4) no participation in another HIV study in the past 12 months; and (5) recent injection of cocaine or heroin.

The first component of the baseline visit was the informed consent process. During this process, interviewers explained the purpose and protocols of the project and answered the participant's questions. Participants signed a written consent form before the start of the interview.

Data were collected through extensive interviews lasting approximately 2 1/2 h. A portion of the interview was conducted face-to-face by a trained interviewer. Information pertaining to drug and sex risk behaviors was collected through the Audio-Computer Assisted Self-Interview (ACASI) software, which has been shown to increase the validity of self-reported risk behaviors.³⁵

Participants were compensated with \$35 for the completion of the baseline interview. Data used for the present study were collected during baseline interviews conducted in March 2004–November 2005. Before the implementation of the study, the Johns Hopkins Bloomberg School of Public Health Institutional Review Board approved all protocols.

Measures

Descriptive norms Descriptive norms were measured by asking participants about the behaviors of their drug partners. Participants reported the number of drug partners who engaged in the following behaviors: (1) sharing needles with other people; (2) cleaning needles with bleach before injecting; (3) using a brand new needle when injecting drugs; (4) using a brand new needle when splitting drugs; and (5) using a brand new cooker for splitting drugs.

Response options included: none; a few (about 25%); about half (about 50%); most (about 75%); and all (100%). Each response was numerically coded as 0–4. An overall composite score was calculated by adding responses to the five items

(range 0–20). Before computing the score, items were recoded so that higher scores signified perceived norms promoting risky behavior. The results of the factor analysis yielded one factor, which explained 61.2% of the variance (eigenvalue=3.06). The scale had strong internal consistency (Cronbach's α =0.83).

Injunctive norms Injunctive norms were assessed by asking participants to rate their level of agreement with eight statements on a five-point Likert scale (1=strongly disagree to 5=strongly agree). Each item assessed the approval or disapproval of various injection behaviors among drug partners like sharing used needles. Items are included in [Appendix](#).

The total score was calculated by adding responses to the eight items (range 8–40). Before calculating the score, some items were recoded to ensure that a higher score indicated perceived norms promoting risky practices. Factor analysis was conducted to examine the structure of the scale: the eight items loaded on a single factor (eigenvalue=3.41), which accounted for 42.6% of the variance. Cronbach's alpha indicated an acceptable level of internal consistency (α =0.76).

Drug use and HIV risk behaviors Data on drug use and injection behaviors were collected through a revised version of the Risk Behavior Assessment (RBA).³⁶ Specifically, data were collected on the history and frequency of smoking, snorting/sniffing, and injecting including heroin, cocaine/crack, and speedball. These drugs were chosen, as they were the most commonly used hard drugs in this Baltimore sample.

Data were also collected on the use of drugs at a shooting gallery, a communal location where drug users inject with others and can buy, rent, or borrow injection equipment. This behavior was assessed by "In the past 6 months, have you gone to a shooting gallery to use your drugs?" Responses were dichotomous (yes/no).

Frequency of sharing used needles was measured by the question "In the past 6 months, when you injected drugs, how often did you use a needle or tools immediately after another person used it, without cleaning it first with bleach?" As the data were highly skewed, responses were dichotomized into 0=never shared needles in the past 6 months and 1=shared needles at least once in the past 6 months. Participants were classified as needle sharers if they reported any sharing in the past 6 months.

Participants were also asked about exchanging sex for money and drugs. Based on our experiences with this population, we have recognized gender differences in sex exchange behaviors. Women are more likely to offer sex to get money or drugs whereas men tend to be the source of this money or drugs. As a result, analysis of data from male participants focused on responses to the item "During the past 90 days, have you given someone money or drugs to perform sex or have sex with you; this includes oral, vaginal, or anal sex?" On the other hand, analysis of female participant data focused on responses to "During the past 90 days, have you had sex with someone to get money or drugs; this includes oral, vaginal, or anal sex?"

Sociodemographic variables Data on several sociodemographic characteristics were also collected. These variables included age, race, employment level, homelessness, and educational attainment. Self-reported hepatitis C status was also collected. Finally, HIV status was assessed through self-report.

Analyses

Data were collected from 880 STEP participants. Approximately 17% (n =150) of the participants did not inject drugs in the past 6 months and were removed from

the dataset. Also, 46 cases were removed because of missing data on perceived norms and injection behavior items. The final dataset for this study was composed of 684 injectors.

Data were analyzed using Stata Version 8.0 (StataCorp, 2005) and SPSS 13.0 (SPSS, 2004). Exploratory analysis was conducted to examine the distributions and associations among study variables. Before analysis, the main independent variables, descriptive and injunctive norms, were standardized. The standardized variable reflects the change in outcome based on the change in one standard deviation of the independent variable.

Data were stratified by gender. Chi-square tests and *t*-tests were computed to assess unadjusted relationships between needle sharing and several sociodemographic, drug-related, and perceived norms variables. As needle sharing was a dichotomous variable, multiple logistic regression was employed after controlling for several covariates. Covariates that were at least marginally significant at the bivariate level ($p < 0.10$) for both genders were included in the logistic regression analysis.

We included both types of perceived norms in the model simultaneously to assess their independent effect on needle sharing in the presence of each other. There was a significant, but modest, correlation between the two perceived norms variables ($r = 0.248$, $p < 0.001$).

RESULTS

Sample Characteristics

In our sample, more than a third (37.7%) of participants reported sharing needles in the past 6 months. The sample was predominantly composed of males ($n = 427$, 62.4%). Among males, 36.5% ($n = 156$) reported sharing needles in the past 6 months. Similarly, 39.7% ($n = 102$) of females reported sharing needles.

Data on sociodemographic characteristics of male participants are shown in Table 1. There were several differences between males who reported sharing needles and males who did not share needles in the past 6 months. Males who shared needles were more likely to be younger and less likely to be African American compared to their nonsharing counterparts. Needle sharers were significantly more likely to be homeless and report being in prison the past 6 months. A higher proportion of men who shared needles also self-reported being infected with hepatitis C and having sex with another injector in the past 90 days.

Table 2 presents the sociodemographic data on female participants. Like males, female sharers tended to be younger and less likely African American compared to women who did not share needles in the past 6 months. Compared to nonsharers, women who shared needles were significantly more likely to be homeless, have a sex partner who was an injector, and be infected with hepatitis C (self-report).

Drug-Related Behaviors

Data on drug-related behaviors among male participants are also shown in Table 1. Males who shared needles were more likely to report smoking crack and injecting cocaine in the past 6 months. In addition to drug use, two HIV risk behaviors were also examined. A higher proportion of needle sharers injected at a shooting gallery in the past 6 months. Also, men who gave someone money or drugs in exchange for sex were more likely to share needles.

TABLE 1 Sample characteristics of male participants who shared needles vs. participants who did not share needles

Characteristic	Sharers <i>n</i> =156 (36.5%)	Non-sharers <i>n</i> =271 (63.5%)
Age: mean (SD)*	42.7 (8.5)	44.9 (8.2)
Race: African American***	107 (69.0)	228 (84.4)
High school diploma or higher ⁺	61 (39.1)	129 (47.6)
Employed at least part-time	32 (20.5)	62 (22.9)
Been homeless in past 6 months***	78 (50.0)	83 (30.6)
Spent time in prison in past 6 months**	61 (39.1)	76 (28.0)
HIV positive (self-reported)	22 (14.2)	37 (13.7)
Infected with hepatitis C (self-reported)*	68 (43.6)	89 (32.8)
Had sex with an injector in past 90 days**	108 (69.2)	144 (53.1)
Injected cocaine in past 6 months*	118 (75.6)	180 (66.4)
Injected heroin in past 6 months	146 (93.6)	251 (92.6)
Injected speedball in past 6 months	127 (81.4)	204 (75.3)
Smoked crack in past 6 months**	106 (67.9)	139 (51.3)
Went to a shooting gallery in the past 6 months***	74 (47.4)	78 (28.8)
Exchanged sex in the past 90 days**	47 (30.1)	45 (16.6)
Descriptive norms score: mean (SD)***	12.9 (3.54)	10.4 (4.64)
Injunctive norms score: mean (SD)***	22.9 (4.72)	20.7 (5.76)

⁺ *p*<0.10
^{*} *p*<0.05
^{**} *p*<0.01
^{***} *p*<0.001

Female needle sharers and nonsharers did not differ in their use of cocaine, heroin, or speedball, regardless of the route of administration (Table 2). However, a higher proportion of needle sharers reported injecting at a shooting gallery in the past 6 months. In addition, having sex in exchange for money or drugs was highly associated with needle sharing among females.

Perceived Norms

Among males, needle sharers reported significantly higher descriptive norms scores and injunctive norms scores, which indicate norms promoting risky behaviors (*p*<0.001). Whereas female needle sharers had higher descriptive norms scores compared to nonsharers (*p*<0.001), injunctive norms scores did not differ between the groups (*p*<0.05).

Multiple Logistic Regression

Males In a multiple logistic regression model, after controlling for sociodemographic and HIV-related variables that were significant at the bivariate level, descriptive norms were highly associated with needle sharing (AOR=1.58, 95%CI=1.20–2.08). In addition, injunctive norms were significantly associated with needle sharing (AOR=1.30, 95%CI=1.05–1.61). As shown in Table 3, needle sharing was associated with having a sex partner who injected (AOR=1.70, 95%CI=1.05–2.75) and giving money or drugs in exchange for sex (AOR=1.83,

TABLE 2 Sample characteristics of female participants who shared needles vs. participants who did not share needles

Characteristic	Sharers <i>n</i> =102 (39.7%)	Non-sharers <i>n</i> =155 (60.3%)
Age: mean (SD)**	39.2 (7.6)	42.1 (6.8)
Race: African American*	81 (79.4)	139 (89.7)
High school diploma or higher	43 (42.2)	70 (45.2)
Employed at least part-time	11 (10.8)	11 (7.1)
Been homeless in past 6 months**	44 (43.1)	38 (24.5)
Spent time in prison in past 6 months	25 (24.5)	28 (18.1)
HIV positive (self-reported)	11 (10.8)	14 (9.0)
Infected with hepatitis C (self-reported)*	53 (52.5)	58 (37.7)
Had sex with an injector in past 90 days*	75 (73.5)	92 (59.4)
Injected cocaine in past 6 months*	118 (75.6)	180 (66.4)
Injected heroin in past 6 months	146 (93.6)	251 (92.6)
Injected speedball in past 6 months	127 (81.4)	204 (75.3)
Went to a shooting gallery in past 6 months***	42 (41.2)	32 (20.6)
Exchanged sex in past 90 days**	54 (52.9)	38 (24.5)
Descriptive norms score: mean (SD)**	13.1 (3.35)	10.4 (4.68)
Injunctive norms score: mean (SD)	23.1 (5.41)	21.9 (6.02)

+*p*<0.10**p*<0.05***p*<0.01****p*<0.001

95%CI=1.08–3.11). Injecting at a shooting gallery was marginally associated with needle sharing (*p*<0.10).

Females As shown in Table 4, even after adjusting for other covariates significant at the bivariate level, higher descriptive norms scores were related to needle sharing (AOR=1.78, 95%CI=1.24–2.55) among women. However, injunctive norms were not associated with needle sharing among female participants (*p*>0.05). Females

TABLE 3 Multiple logistic regression model of male participants who reported sharing needles vs. participants who did not share needles

Variables	AOR	Standard error	Z statistic	95%CI
Age	0.92	0.01	−1.17	[0.96–1.01]
Race: African American	0.73	0.22	−1.04	[0.40–1.31]
Been homeless in past 6 months ⁺	1.55	0.35	1.19	[0.99–2.42]
Infected with hepatitis C (self-reported)	1.19	0.28	0.73	[0.75–1.89]
Had sex with another injector*	1.70	0.42	2.17	[1.05–2.75]
Gave money or drugs for sex*	1.83	0.19	2.25	[1.08–3.11]
Went to a shooting gallery ⁺	1.50	0.36	1.66	[0.93–2.40]
Descriptive norms***	1.58	0.22	3.24	[1.20–2.08]
Injunctive norms*	1.30	0.14	2.37	[1.05–1.61]

+*p*<0.10**p*<0.05***p*<0.01****p*<0.001

TABLE 4 Multiple logistic regression model of female participants who reported sharing needles vs. participants who did not share needles

Variables	AOR	Standard error	Z statistic	95%CI
Age	0.98	0.21	−1.18	[0.94–1.02]
Race: African American	0.73	0.33	−0.71	[0.30–1.75]
Been homeless in past 6 months	1.28	0.41	0.76	[0.68–2.39]
Infected with hepatitis C ⁺	1.69	0.51	1.76	[0.94–3.04]
Had sex with another injector*	1.85	5.58	1.98	[1.01–3.42]
Gave money or drugs for sex**	2.86	0.89	3.36	[1.55–5.28]
Went to a shooting gallery	1.63	0.53	1.48	[0.85–3.10]
Descriptive norms**	1.78	0.33	3.15	[1.24–2.55]
Injunctive norms	0.99	0.14	−0.09	[0.74–1.31]

⁺ $p < 0.10$
^{*} $p < 0.05$
^{**} $p < 0.01$
^{***} $p < 0.001$

who reported exchanging sex for drugs or money were almost three times more likely to share needles (AOR=2.86, 95%CI=1.55–5.28). In addition, having sex with another injector was associated with needle sharing (AOR=1.85, 95%CI=1.01–3.42). There was marginal significance between self-reported hepatitis C infection and needle sharing ($p < 0.10$).

DISCUSSION

This study of drug injectors demonstrates that an injector’s social environment affects their reported risk behaviors. The main objective of this study was to examine gender differences in the relationship between perceived descriptive and injunctive norms and injection risk behavior. Our data provide evidence that perceived norms play a role in needle sharing. However, differences exist based on the type of norm and gender.

Descriptive norms promoting risky behaviors were significantly related to needle sharing for both males and females. Injectors who believed that their drug partners practiced risky behaviors were more likely themselves to report sharing needles. Individuals who identify with the group may engage in risk behaviors because they perceive the behavior as normative. Our reference group to the perceived norms questions was drug partners. Drug partners are aware of each other’s behaviors because they have the opportunity to observe the behaviors when they use drugs together. IDUs who practice risky behaviors may have broken ties with individuals who practice safer behaviors. Furthermore, Latkin et al. found that individuals often associate with others who have the same drug-using habits (i.e., birds of a feather flock together). Thus, individuals who share needles may hang around with others who also share.⁶ Through observing others’ behavior and comparing their own actions, perceived norms about which injection behaviors are widely practiced may emerge. Interventions that strengthen ties with individuals who practice safer behaviors may be a viable approach to risk reduction. Ties with people who practice safe behavior, through social influence processes, may lead to the promotion of safer injection norms.

It is important to note that perceived norms may not always be accurate. This inaccuracy may be attributed to commonly used HIV prevention heuristics or

decision-making guides, such as beliefs that known drug partners can be trusted or are “safe.” Common heuristics often lead to biases and inaccuracies in the perceived behavior of others.³⁷ Research on alcohol use among college students has shown that many students overestimate their peers’ alcohol use.^{38,39} As a result, the perceived norms are inaccurate or a misconception. Misconceptions may occur among injection drug users. In an uncertain situation or in the absence of past experiences to draw upon, injectors may assume that their peers’ practices are the same as their own so that their own risky behavior does not seem abnormal. Future research that compares IDU-related perceived norms with actual injection behaviors of peers is needed to assess the accuracy of perceived norms.

Our study also examined injunctive norms. Among men, injunctive norms were also related to needle sharing. Whereas injunctive norms were associated with needle sharing among males, there was no association for females. This finding was the same in a model that did not control for perceived descriptive norms. This lack of association suggests that women may be more concerned about being in line with their drug partners’ behaviors rather than gaining their approval or acceptance. Another possible explanation is that another group, such as sex partners, may be a more important reference group compared to drug partners among women. Thus, their sexual partners’ approval and acceptance, rather than that of drug partners, may have a stronger impact on their behavior.

Our review of the literature only identified one other study that examined the independent effect of each type of norm separately for male and female injectors. Hawkins et al. found that perceived descriptive norms were significantly related to risk reduction among men and women.²⁸ However, injunctive norms were not associated with risk reduction among females. This study measured each type of norm through one item focusing on one specific behavior (cleaning needles with bleach). Our findings are consistent with this study. However, they build upon this research by demonstrating that injunctive norms pertaining to general risk reduction, rather than perceived norms about a specific practice, are not as persuasive among women compared to descriptive norms.

In their review of alcohol-related studies, Lewis and Neighbors suggested that as drinking is viewed as a “male behavior,” females are less persuaded by injunctive norms.⁴⁰ This may hold true for injection drug use. Among men, needle sharing is often a more public behavior, thus making it a more accepted behavior. For women, needle sharing often occurs in a private setting with a single person, such as a sex partner.⁴¹ Male IDUs may be more inclined to seek approval from their peers compared to women.

Differential power between males and females is another possible explanation. Women who are dependent on others for drugs and injection equipment may feel limited control over their behavior and cannot easily modify their risky practices. As a result, their behavior is not influenced by perceived peer approval.

Based on our findings, interventions are needed that focus on shifting the perceived norms in the direction of risk reduction. Our findings show the importance of prevention messages tailored to gender. Among women, messages illustrating that peers do not approve of risk behaviors will not be as effective in reducing risk behavior.

In comparing the magnitude of this association, descriptive norms had a stronger effect size for both males and females. Descriptive norms should be the primary focus and injunctive norms should be the secondary focus in prevention interventions. The primary goal of interventions can be to persuade drug users that

more of their peers are engaging in risk reduction strategies vs. risky behaviors. In addition, peer educators are needed to model these safer behaviors to validate perceived norms. The secondary message should be that risky behaviors are not acceptable. Interventions asserting that “most drug users practice risk reduction” are different from messages saying “most drug users approve of risk reduction behaviors.”

The present study had several limitations. First, the data were cross-sectional. Additional research is needed to determine the longitudinal relationship between perceived norms and risk behaviors among IDUs. In addition, there may be sampling biases based on self-selected participation. Injectors who participated in the study may not be representative of the general IDU population. Another limitation is that the data were self-reported; thus, some responses, such as HIV risk behaviors, may have been influenced by social desirability. We attempted to limit this bias by using the ACASI for all questions pertaining to risk behaviors. Also, research has demonstrated that self-reported risk behaviors are valid and not influenced by social desirability bias.⁴²

Despite these limitations, this study has demonstrated how the psychosocial environment is related to HIV risk behaviors. Several studies have shown that peer education is an important component of HIV prevention among IDUs.⁴³ Peers can be used to get information and risk reduction materials to this hard-to-reach population. Furthermore, the endorsement of risk reduction by peers may lead to sustainable norm change within a group. The findings also support the need for gender-specific HIV interventions.

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APPENDIX

Injunctive Norms Survey Items

1. If we were pressed for time, my drug buddies would not care if we shared the same needle.
2. If we didn't have enough tools, my drug buddies would not care if we shared the same needle.
3. My drug buddies would give me a hard time if I cleaned my needle with bleach before getting high.
4. My drug buddies would not say anything to me if they saw me use a dirty needle.
5. My drug buddies would get upset if I refused to lend them a needle after I used it.
6. My drug buddies would get upset if I insisted on cleaning my needle before I lent it to them.
7. My drug buddies would give me a hard time if I wanted to use a separate needle just to split drugs wet.
8. My drug buddies would give me a hard time if I wanted to split drugs dry with them.

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