

THE INFLUENCE OF CULTURAL VALUES ON SELF-EFFICACY IN  
REDUCING HIV RISK BEHAVIORS

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ABSTRACT

This study seeks to examine the influence of key cultural values like machismo, familism, traditionalism, and religiosity on self-efficacy in reducing HIV risk among Mexican-origin IDUs. The purpose of this examination hinges on the importance of including cultural concepts/values not only to facilitate process, but also to add a cultural dimension to an HIV/AIDS intervention that may facilitate attitudinal and behavioral change as well.

The findings suggest that culturally innovative approaches can facilitate HIV/AIDS risk reduction among male Mexican-origin drug injectors. The importance of key cultural values like machismo is underscored by its association with HIV risk reduction for both sexual and injection related risks. Intervention programs must identify strategies to incorporate cultural values in their research and evaluation of intervention efficacy. Culturally innovative approaches hold the promise of substantially reducing HIV risk behaviors among Hispanic drug injectors, and may hold promise for other populations affected by HIV/AIDS as well.

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## *Literature Review*

Hispanics continue to show increasing rates of HIV infection compared to non-Hispanic whites via the transmission category of injection drug use (Selik, Castro, & Pappaioanou, 1988; Diaz, Buehler, Castro & Ward 1993; Centers for Disease Control and Prevention, 1996). By and large, injection drug use and condomless sex with an HIV+ injection drug user are the primary routes of HIV transmission among Hispanic heterosexuals (Centers for Disease Control and Prevention, 1997). While the importance of these transmission routes cannot be understated, there are few published reports on the prevalence of HIV risk behaviors engaged in by Hispanic injection drug users (IDUs) (Friedman, Sotheran, Abdul-Quader, Primm, Des Jarlais, Kleinman, Mauge, Goldsmith, El-Sadr, & Maslansky 1987; Marmor, Des Jarlais, Cohen, Friedman, Beatrice, Dubin, El-Sadr, Mildvan, Yancovitz, Mathur, & Holzman, 1987; Friedman, Sufian, & Des Jarlais, 1990). However, most of these studies have focused on Puerto Rican IDUs to the exclusion of Mexican-origin IDUs (Montoya, Estrada, Jones & Robles, 1996). Notwithstanding, there are well-established co-factors for the transmission of HIV among IDUs, inclusive of Mexican-origin IDUs. These co-factors include direct and indirect sharing of needles/syringes, cookers, cottons, and rinse water; the frequency of injection; the lack of access to clean or new needles/syringes and bleach; the failure to properly use bleach to disinfect needles/syringes; the exchange of sex for money and/or drugs; and sex while under the influence of drugs (Ginzburg, French, Jackson, Hartsock, MacDonald, & Weiss, 1986; Chaisson, Moss, Onishi, Osmond, & Carlson, 1987; Des Jarlais, Friedman, & Stoneburner, 1988; Booth, Koester, Brewster, Weibel, & Fritz, 1991; Vlahov, Astemborski, Solomon, & Nelson, 1994; McCoy & Inciardi,

1995; Grund, Friedman, Stern, Jose, Neaigus, Curtis, & Des Jarlais, 1996). All of these factors have been shown to increase the likelihood of HIV transmission among IDUs and their sexual partners.

Several authors have proposed the integration of key cultural values and concepts in HIV/AIDS prevention programs targeted to Hispanics (Peterson & Marin, 1988; Marin, 1989; Marin, 1993; Singer 1991). These cultural values have included *simpatia*, *respeto*, *confianza*, *machismo*, *familism*, and *religiosity*, among others. Generally, advocates for the inclusion and integration of cultural values in HIV/AIDS prevention programs stress the importance of these values in terms of their influence on HIV/AIDS related knowledge, attitudes, and behaviors, as well as assisting in our understanding of the dynamics of HIV risk within the subcultural context of Hispanic IDUs (Mata & Jorquez, 1989; Marin, 1993; Singer, 1991).

The inclusion of some of these cultural values in HIV/AIDS prevention programs have been used to facilitate the process of client - interventionist interaction, recruitment and retention; that is, those 'culturally sensitive' or 'culturally appropriate' approaches that stress the importance of providing a 'cultural milieu' consistent with the 'subjective culture' of the targeted population group (Vega, 1992; Landrine & Klonoff, 1992; Marin, 1993). Nevertheless, few HIV/AIDS interventions targeting Hispanics use cultural values to facilitate actual risk reduction or behavior change (Mikawa, Morones, Gomez, Case, Olsen, & Gonzales-Huss, 1992). It is important to examine the influence of *machismo*, *familism*, *traditionalism*, and *religiosity* on HIV risk taking and HIV risk reduction in order to understand how these cultural values can be used to facilitate HIV/AIDS risk reduction. Additionally, these cultural values could be assessed within the particular sub-cultural context of the

targeted high risk group. For example, machismo and familism may mean different things to gay Hispanics, Hispanic IDUs, or the general Hispanic population.

In the social science literature “machismo” typically refers to a constellation of traits exhibited and valued by Hispanic men that are the result of various historical processes and cultural transformations. There are two general trends in representations of “machismo.” First, researchers such as Madsen (1964) and Lewis (1961) offer stylized and often monolithic representations of “machismo” which emphasize rigidly dichotomized attitudes, behaviors, and gender roles. In line with these representations other researchers focus on the hypermasculine aspects of Mexican male orientations by emphasizing fearlessness, control, dominance, sexual prowess, and aggression (Casas, Wagenheim, Banchemo, & Mendoza-Romero, 1994; Goldwert 1985; Ingoldsby 1991; Stevens 1973). A second, more comprehensive representation of “machismo” moves away from the monolithic ideal types and psychological constructs linked to compensation and passive-aggressive syndromes by underscoring the variability of male roles, masculinity, and power relations (Cromwell & Ruiz 1979; Baca-Zinn 1982; Gutmann 1996).

Within the context of the injection drug user subculture “machismo” is linked almost exclusively to drug use, aggressiveness and violence. Thus, Bullington (1977:108, 115) regards “machismo” as both a means to navigate through the prison experience and related to the expression of criminal behavior. Likewise, Casavantes (1976), in his study of “el tecato,” emphasizes the hypermasculine aspects of this concept. He notes that “machismo in its exaggerated form [includes] fighting, drinking, performing daring deeds, seducing women, asserting independence from women, and . . . bragging about escapades” (Casavantes 1976:149).

Similar aspects of “machismo” were highlighted by our subjects in the Ambos Nogales area

(Quintero & Estrada, 1997). In general, two types of “machismo” are recognized: the “machismo” of the street, characterized by violence, oppression, control, risk taking, and a lack of compassion, and the “machismo” of the home, in which a man exhibits power and dominance over his spouse and children.

The “machismo” of the street, which has the most social utility among IDUs, is characterized by excess, drug use, violence, crime, fearlessness, and a willingness to confront and dominate others, as well as insensitivity and a lack of refinement. For the IDU “machismo” is simply “being a man” — invulnerable and a social locus of power and influence. On the streets in the drug world “machismo” encapsulates important ideas of self-identity, control, and social standing. The components of insensitivity and lack of refinement are especially important when dealing with condom use, needle sharing, and bleaching of needles.

Familism is another important and pervasive concept in Hispanic culture. It includes aspects of caring for the family and loved ones, maintaining the family’s honor, providing emotional and instrumental support, and passing on the cultural heritage of Hispanics (Mindel, 1980; Valle & Martinez, 1980; Sabogal, Marin, Otero-Sabogal, Marin, & Perez-Stable, 1987; Ingoldsby, 1991). To the extent that Mexican-origin IDUs are not marginalized from their family, this concept can be seen as a useful motivator for HIV risk reduction.

Religiosity is yet another core value ascribed to Hispanics (Amaro, 1988a). Religiosity is closely connected to the concept of familism and traditionalism (Castro & Gutierrez, 1995). Although the majority of Hispanics are Catholic, especially those of Mexican-origin, most are selective in regard to the doctrine regarding birth control and the use of condoms (Rochat, 1981; Amaro, 1988b). Nevertheless, it is safe to say that among the majority of Hispanics religiosity is an impor-

tant aspect of their lives (Sabagh & Lopez, 1981), and may influence HIV risk reduction.

According to Ramirez (1991) and Castro & Gutierrez (1995), the concepts of family traditionalism and traditionalism in general, refer to several domains that include, but are not limited to, distinctions between gender roles, family orientation and loyalty, a strong sense of community, present time orientation, reverence for elders, the value of traditional ceremonies, and spirituality and religiosity. Moreover, Casto & Gutierrez (1995) unequivocally state that both religiosity and traditionalism play an important role in the socialization of Mexican-origin Hispanics and other Hispanics as well.

Also of importance is the concept of self-efficacy to reduce HIV risk behaviors. According to the Theory of Reasoned Action (Ajzen & Fishbein, 1973) and Social Learning Theory (Bandura, 1977), intentions and self-efficacy are immediate determinants of behavior. Self-efficacy refers to the belief that one can actively and positively affect behavior through skills and attitudes. Several studies have found that self-efficacy is a very important predictor for HIV risk reduction (Basen-Engquist & Parcel, 1992; Catania, Kegeles, & Coates, 1990; Gibson, Catania, & Petersen, 1991; Fisher & Fisher, 1992).

This study seeks to examine the influence of key cultural values like machismo, familism, traditionalism, and religiosity on self-efficacy in reducing HIV risk among Mexican-origin IDUs. The purpose of this examination hinges on the importance of including cultural concepts/values not only to facilitate process, but also to add a cultural dimension to an HIV/AIDS intervention that may facilitate attitudinal and behavioral change as well.

## Method

### Subjects

Between January 1994 and December 1996, 223 Mexican-origin drug injectors were recruited from street settings in the *Ambos Nogales* area (Nogales, Arizona and Nogales, Sonora, Mexico) and were interviewed in person. Each of these individuals were paid \$10 for successfully completing the interview. Interviews were conducted in Spanish or English, depending on the preference of the subjects. Subsequently, 91 percent of the subjects chose to be interviewed in Spanish. The analysis presented is based on 184 of these subjects who were male IDUs.

Table 1 on the following page presents selected sociodemographic characteristics of this sample. The mean age was 32 years, with a range of 18 to 62 years (S.D.= 8.8). Approximately 57 percent of the subjects were unemployed, and 91 percent had less than a high school education. Additionally, almost 29 percent of the subjects considered themselves homeless.

### Procedure

A “targeted sampling” plan (Watters & Biernacki, 1989) was developed using data gathered from our ethnographic field component, which included information such as copping sites, hang-outs and *picaderos* (also known as shooting galleries, though they are quite different from shooting galleries found on the east or west coasts of the United States). This technique has proved effective in identifying ‘hidden populations’ in a number of studies focusing on out-of-treatment IDUs (Braunstein, 1993; Carlson, Wang, Siegal, Falck & Guo, 1994; Robles, Colon, & Freeman, 1993).

To be eligible for the study, subjects were required to be at least 18 years of age, not enrolled in drug treatment within the 30 days prior to recruitment, and have verified injection drug use

Table 1

<b>Characteristics</b>	<b>n</b>	<b>Percent</b>
Ethnicity:		
Mexican-origin	184	100
Gender:		
Male	184	100
Educational Attainment:		
No formal schooling	21	11.4
Junior high or less	79	42.9
Less than High School	68	37
GED	7	3.8
High School Graduate	5	2.7
Some College	3	1.6
College Graduate	1	0.5
Marital Status:		
Single	106	57.6
Married/Common Law	28	15.2
Cohabitation	22	12
Separated, Divorced, Widowed	28	15.2
Considered Homeless:		
No	131	71.6
Yes	52	28.4
Employment Status:		
Employed	80	43.5
Unemployed	104	56.5
Income in past 30 days:		
< \$500	130	73
\$500 - \$999	21	11.8
\$1,000 or more	27	15.2
Mean Age:	184	32.02 (S.D.=8.75)
Mean Number of Years in Nogales:	177	16.92 (S.D.=15.6)

within the previous 30 days. Verification of drug use included visual inspection of recent track marks and urinalysis using Roche's ONTRAK system (Roche Diagnostic Systems, Montclair, NJ). Subjects recruited through street outreach were referred to our site office, informed of the study, and required to sign a consent form to participate. Upon signing the consent form, subjects were administered an HIV/AIDS risk assessment questionnaire. Subjects also received a pre-HIV test counseling session, and were offered HIV testing. Overall, 95 percent of the subjects agreed to HIV testing. Two weeks later, subjects returned for a second counseling session (post-test counseling for those who had agreed to be HIV tested), and were either randomized to a "culturally innovative" or a "universal" HIV risk reduction intervention. At three and six months post-intake, subjects were again contacted for follow-up interviews. As part of the HIV intervention, subjects were triaged into either 'high' risk, 'moderate' risk, or 'low' risk groups based on the needle risk behaviors they engaged in within the previous 30 days. In this manner, subjects' risk behaviors could be better targeted and matched to the components of the HIV risk reduction intervention. In our sample, 16.3 percent of the subjects were classified as 'low' risk (they did not share needles and did not use bleach), 15.8 percent of the subjects were classified as 'moderate' risk (they shared needles and used bleach), and 67.9 percent of the subjects were classified as 'high' risk (they shared needles and did not use bleach). Due to the low level of reported sexual activity (87 percent of the sample reported not engaging in sex during the prior 30 days), sexual risk was not included in the analyses.

#### Instrument

The risk assessment instrument developed for the study was derived from several existing HIV risk assessment questionnaires, but primarily NIDA's

Risk Behavior Assessment, and the AIDS Risk Reduction Model (Needle, Fisher, Weatherby, Chitwood, Brown, Cesari, Booth, Williams, Watters, Andersen, & Braunstein, 1995; Catania, Kegeles, & Coates, 1990; Gibson, Catania, & Petersen, 1991). The instrument developed included questions on sociodemographic characteristics, drug use history, risk behaviors in the prior 30 days (including both needle and sexual risks), HIV/AIDS knowledge, perceptions of HIV risk, medical history, drug treatment history, psychosocial constructs such as self-esteem (Rosenberg Self-Esteem Scale), self-efficacy to perform HIV risk reduction strategies, social support, and depression (as measured by the CES-D). Additionally, several cultural concepts like machismo, familism, traditionalism, and religiosity were included to assess their relative influence on HIV risk reduction. The instrument was developed using standard forward-back translation techniques commonly used with Hispanics (Marin & Marin 1991).

#### Measures

The development of the cultural concepts included in the instrument was largely derived from more than 40 in-depth ethnographic interviews conducted with Mexican-origin IDUs on the meaning of machismo to them, and the importance or salience of religion, family and traditional values. The traditionalism concept was derived from Ramirez (1991) and Castro & Gutierrez (1995) work that differentiates individuals on a continuum of traditional to modern orientation. The measurement of machismo was further contextualized by the street survival experience of those Mexican-origin IDUs interviewed (Quintero & Estrada, 1997). For example, machismo is referenced within the drug using subculture of Mexican-origin IDUs that includes aggressiveness towards others, dominance, lack of refinement and insensitiv-

ity, and excess in drug use, though not necessarily drug addiction. A thorough content and thematic analysis of the ethnographic interviews provided information on the type of questions one might include in a quantitative measure of these cultural concepts. The cultural concepts of machismo, familism, traditionalism, and religiosity were then measured using four-point Likert-type questions ranging from “strongly disagree” to “strongly agree.” The cultural concepts and the items used to measure them are referenced in Appendix 1. The final derivation of these measures yielded a machismo scale comprising 11 items with a Cronbach’s alpha of .86, a familism scale comprising 10 items with a Cronbach’s alpha of .77, a traditionalism scale comprising items with a Cronbach’s alpha of .75, and a religiosity scale also comprising 10 items with a Cronbach’s alpha of .84. The scales were coded such that a high score indicates a high orientation to that concept.

The development of the self-efficacy scales was a more straightforward process which included standard items used to measure self-efficacy not to share needles (6 items), self-efficacy to use condoms (7 items), and self-efficacy to use bleach (6 items). These concepts were measured using four-point Likert-type questions ranging from “very sure I won’t” to “very sure I will” in reference to the likelihood of performing the risk reduction behavior. The Cronbach’s alphas of these scales were .96, .96, and .95, respectively. Additionally, a composite measure using the three scales was created, with a corresponding Cronbach’s alpha of .94. A measure of self perceived risk was also developed consisting of 11 items with a corresponding Cronbach’s alpha of .67. The self-efficacy and perception of risk concepts and their measures are referenced in Appendix 2.

The HIV risk behaviors included reflect several of those factors found in previous studies to be related to HIV infection among IDUs. These variables included frequency of injection in the

prior 30 days, and risk group of the subjects (low, moderate, or high) which was based on their needle sharing and bleaching behaviors as described above.

The hypotheses developed for testing were related to the influence of the cultural concepts on self-efficacy to reduce HIV risk behaviors as follows:

1. Those IDUs with a high machismo orientation would possess less self-efficacy to reduce HIV risk behaviors.
2. Those IDUs with a high familism, traditionalism, or religiosity orientation would possess more self-efficacy to reduce HIV risk behaviors.
3. Those IDUs in the high risk category would possess less self-efficacy to reduce HIV risk behaviors than the low and moderate risk categories.
4. The risk category of the IDUs would act independently of the cultural concepts, with those in the high risk category possessing less self-efficacy than those in the low or moderate risk category.

The cultural values of machismo, familism, traditionalism, and religiosity are not hypothesized to have direct (main) effects on self-efficacy for HIV risk reduction. Rather, these cultural concepts should act as contextualizing factors, and therefore should be examined as covariates in that they contextualize HIV risk behaviors and risk reduction as facilitators or inhibitors to perform the desired behavior. However, the risk category one is in should have the most influence on self-efficacy to reduce risk.

## *Results*

Overall, subjects injected drugs 151.4 times in the prior 30 days (S.D.=147.7). The intensity of drug use (number of times injected/number of days injected) showed that on average the subjects injected drugs 3.5 times per day (S.D.=2.5). Selected HIV risk behaviors for the sample are shown in Table 2. On average, the subjects used needles that had been

used by others 44.0 times in the prior 30 days (S.D.=80.7), and shared needles with an average 7.6 other injectors (S.D.=21.0).

The proportion of times the subjects used bleach and shared needles is also shown. The subjects infrequently used bleach, and shared needles about a third of the time.

Both the correlational analyses and the ANOVAs presented are based solely on the baseline interviews with male IDUs. Analyses were conducted using SPSS for Windows, Version 6. Pearson correlations are shown, with significance assessed at  $p < .05$  in order to minimize type 1 error.

As seen in Table 3, machismo was negatively correlated with familism ( $p < .005$ ) and traditionalism ( $p < .01$ ). Additionally, machismo was negatively correlated with religiosity, though not significantly so. Familism was found to be positively correlated with both religiosity ( $p < .001$ ) and traditionalism ( $p < .001$ ). Similarly, religiosity was positively correlated with traditionalism ( $p < .001$ ). These correlations support the construct and content validity of these concepts within the specific subgroup of Mexican-origin IDUs in the study.

The correlation of the cultural concepts with

<b>Risk Behavior (Prior 30 days)</b>	<b>n</b>	<b>Mean (S.D.) or %</b>
Times used dirty needles	184	44.1 (80.7)
Number of people shared with	184	7.60 (21.0)
Number of times had sex	184	1.79 (8.6)
Number of times injected	184	151.4 (147.7)
Number of times injected/day	184	3.51 (2.5)
Proportion of time shared needles	184	33% (43%)
Proportion of time used bleach	154	14% (32%)
How often use condoms:		
Always	21	11.0%
Sometimes	44	24.0%
Never	119	65.0%
Risk Group Category		
Low Risk	30	16.3%
Moderate Risk	29	15.8%
High Risk	125	67.9%

self-efficacy to reduce HIV risk behavior is shown in Table 4. The operating hypothesis was that machismo would be negatively correlated with self-efficacy to reduce risk, and that the concepts of traditionalism, familism, and religiosity would be positively correlated with self-efficacy to reduce HIV risk behavior. The first hypothesis was supported by the results. Machismo was negatively correlated with self-efficacy to reduce needle sharing risks ( $p < .001$ ), with self-efficacy to increase bleaching of needles ( $p < .005$ ), and with self-effi-

cacy to reduce sexual risks by using condoms ( $p < .05$ ). Additionally, the composite measure, composed of all three self-efficacy domains, was negatively corre-

	<b>Machismo</b>	<b>Familism</b>	<b>Religion</b>	<b>Traditionalism</b>
Machismo	1.000			
Familism	-.1800*	1.000		
Religion	0.0013	.3206***	1.000	
Traditionalism	-.1679*	0.6198	.3291***	1.000
* $p < .05$ ; *** $p < .001$				

	<b>Self Efficacy Not to Share Needles</b>	<b>Self Efficacy to Using Bleach</b>	<b>Self Efficacy to Use Condoms</b>	<b>Composite Self Efficacy</b>
Machismo	-.2069***	-.1619*	-.1417	-.1978**
Familism	0.1139	0.0913	0.1370	0.1204
Religion	-.0012	-.0235	0.100	0.0300
Traditionalism	-.0741	0.0696	.1886*	-0.013

\*p<.05; \*\*p<.01; p<.005

lated with machismo ( $p<.001$ ). We found some support for the second hypothesis as well. Familism was positively correlated with self-efficacy to reduce needle sharing, self-efficacy to increase bleaching, and self-efficacy to use condoms, though not statistically significant. Religiosity was only found to be correlated with self-efficacy to use condoms to reduce risk ( $p<.05$ ). The tradi-

main effects of the risk groups with the covariates of machismo, familism, traditionalism, and religiosity, a test of the fourth hypothesis. Other independent variables such as age, education level, frequency of injection, and risk perception were also included as covariates in the examination of self-efficacy to reduce HIV risk behaviors. For self-efficacy to reduce needle sharing risks the results

	<b>Group Differences</b>	<b>Univariate <i>F</i></b>	<b><i>F</i> Probability</b>
Sharing Needles	1,2>3	10.83	0.0000
Using Bleach	1,2>3	7.90	0.0005
Using Condoms	1,2>3	13.45	0.0000
Composite	1,2>3; 2>1	17.22	0.0000

Group 1= low needle risk  
Group 2= moderate needle risk  
Group 3= high needle risk

tionism concept was not significantly correlated with any of the self-efficacy domains.

The third hypothesis was also supported. Analysis of variance was used to examine the differences between the low, moderate, and high risk groups with the self-efficacy domains. Statistically significant associations were found which consistently showed that the high risk group possessed less self-efficacy to reduce risk than the low and moderate risk groups (Table 5).

Analysis of covariance was used to assess the

showed a main effect for the risk group,  $F=8.96$  (2,179),  $p<.001$ , and statistically significant covariate effects for machismo,  $F=6.84$  (1,179),  $p<.01$ , education level,  $F=4.12$  (1,179),  $p<.05$ , and risk perception,  $F=5.26$  (1,179),  $p<.05$ . For self-efficacy to use bleach, risk group was a significant main effect,  $F=6.26$  (2,165),  $p<.005$ , and machismo emerged as a significant covariate,  $F=5.27$  (1,165),  $p<.05$ . For self-efficacy to reduce sexual risks by using condoms, there was a significant main effect for risk group,  $F=10.92$  (2,131),

$p < .001$ , but no significant covariates; and, for the composite self-efficacy factor there was a significant main effect for risk group,  $F = 14.84$  (2,183),  $p < .001$ , and machismo again emerged as a significant covariate,  $F = 6.99$  (1,183),  $p < .01$ .

### *Discussion*

This study was undertaken to assist in our understanding of how cultural values are associated with self-efficacy for HIV risk reduction. It attempts to answer a question posed by M. Singer (1991) - Does ethnic culture matter in the development and provision of HIV/AIDS risk reduction programs? More importantly, how can we use ethnic culture, and cultural values themselves to facilitate HIV risk reduction? These become important questions to answer if one wants to design "culturally innovative" HIV risk reduction programs targeting Hispanics. To do this, one must examine several key cultural values that have been proposed in the literature to be important elements for inclusion in HIV/AIDS risk reduction programs.

The research presented here clearly shows the importance of several cultural values in relation to self-efficacy to reduce HIV risk. Unlike other research that has shown negative relationships between machismo and condom use (Mikawa, Morones, Gomez, Case, Olsen, & Gonzales-Huss, 1992), the present research did not show such a relationship. However, the research did demonstrate that machismo, as measured in this subgroup, is negatively associated with self-efficacy to perform risk reduction by not sharing needles and using bleach to clean needles. In our previous ethnographic research, we have seen that condom use was perceived by Mexican-origin drug injectors as too delicate or refined and not the "macho" thing to do. Clearly, this perception is salient among those IDUs that have a machismo orientation. The present research goes farther in the examination of machismo with associated injection risk behav-

iors like cleaning injection equipment with bleach and not sharing needles with others. Our finding that machismo was negatively correlated with self-efficacy to perform these risk reduction behaviors suggests that machismo is a pervasive concept in the lifestyle of Mexican-origin IDUs and could potentially contravene attempts at HIV risk reduction with this population. The data also provides some support for the notion that familism is positively associated with self-efficacy to perform HIV risk reduction. However, there were no consistent findings between religiosity or traditionalism with respect to the self-efficacy measures. Does this mean that these values are not important in HIV/AIDS risk reduction interventions targeting Mexican-origin IDUs? We do not think so. Rather, we must find a way to re-cast these concepts to garner support for HIV risk reduction among the social and familial support networks of these individuals.

Do cultural values matter in HIV/AIDS risk reduction programs targeting Hispanics? The findings of the study strongly suggests that they do. Moreover, the findings support the idea of developing and implementing culturally innovative risk reduction programs. "Culturally innovative approaches," as defined by Singer (1992: 276) "struggle to consciously mobilize and enhance cultural beliefs, symbols, concepts, values, and roles as core elements of the intervention process." Hence, culturally innovative approaches must move beyond the provision of the intervention in Spanish, the interactions between staff and clients that include aspects of *respeto*, *confianza*, and *simpatia*, or delivering the intervention in the geographical setting of the target population. Culturally innovative approaches must also include as a key component the examination of cultural values and HIV risk reduction, and using these values to facilitate and enhance risk reduction with Hispanics. Certainly, the value of familism can be used in this manner. A more difficult task is redefining machismo. Again, as measured in this study,

“machismo of the street” is seen as a necessary value in the underground of the IDU subculture - it is a means of survival on the streets. How does one begin to redefine this value in order to facilitate HIV risk reduction, especially given its salience among Mexican-origin IDUs? One could do this in several ways. First, getting the IDUs off the streets and into drug treatment may hold the best promise for the elimination of this value. Unfortunately, the Ambos Nogales area is severely lacking in drug abuse treatment facilities. A second option is focusing on “machismo of the home” or those characteristics that have been traditionally viewed as macho - as provider and protector of the family, for example, may be useful as a facilitator for HIV risk reduction. Other research supports this proposition of redefining machismo as a concept related to familism (Lex, 1987; Mikawa, Mornones, Gomez, Case, Olsen, & Gonzales-Huss, 1992; Casas, Wagenheim, Banchemo, & Mendoza-Romero, 1994). In the present study, familism was found to be associated, though not significantly so, with self-efficacy to perform HIV risk reduction behaviors in almost all spheres of HIV risk assessed here - the use of condoms, the use of bleach, and not sharing needles with others. Clearly, familism is an important value that can be used in HIV intervention programs to make risk reduction more salient to IDUs by invoking the support of family and loved ones.

Unfortunately, at this point we cannot generalize these findings to other Hispanic drug injectors. The fact that recruitment into the study was non-random, and used targeted sampling techniques to recruit out-of-treatment drug injectors was a limiting factor. While we have confidence in the techniques used for recruitment, the sample size is too small to draw firm conclusions. Another limitation is that the IDUs recruited may be less controlled users, and in fact may use drugs more frequently than IDUs not on the streets. Nevertheless, the results presented here are tanta-

lizing and await additional research that uses culturally innovative approaches to facilitate HIV risk reduction among Hispanic drug injectors.

The findings suggest that culturally innovative approaches can facilitate HIV/AIDS risk reduction self efficacy among male Mexican-origin drug injectors. The importance of key cultural values like machismo is underscored by its association with HIV risk reduction self efficacy for both sexual and injection related risks. Intervention programs must identify strategies to incorporate cultural values in their research and evaluation of intervention efficacy. Culturally innovative approaches hold the promise of substantially reducing HIV risk behaviors among Hispanic drug injectors, and may hold promise for other populations affected by HIV/AIDS as well.

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## Appendix 1

### Cultural Concepts and Measures

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**Religion:**

I am a very religious person  
Healing comes only from God  
I feel that my relationship with God is a very important part of my everyday life  
My faith in God has guided my life and helped me through personal crises I have had  
I go to church regularly  
I want my children to have a religious background  
Good health and happiness happens to people who obey God's commandments  
I have a lot of faith in the power of God  
I pray every day  
It doesn't do any good to try and change the future because the future is in God's hands

**Familism:**

More parents should teach their children to be loyal to the family  
It is a mother's special responsibility to provide her children with proper religious training  
I rely on my family for help when I need it  
No matter what the cost, dealing with my relatives' problems comes first  
I hide my drug use from my family  
My family accepts my drug use  
I would never steal from my family to buy drugs  
It is important to me to be respected by my family  
In spite of my drug use, I always try to take care of my family  
My family is very important to me

**Traditionalism:**

I prefer to live in a small town where everyone knows each other  
Husbands and wives should share equally in child rearing and child care  
It is hard to meet and get to know people in large cities  
You should know your family history so you can pass it along to your children  
Adult children should visit their parents regularly  
We should make time for friends and others  
Children should be taught to always be close to their families  
We are in such a hurry sometimes that we forget to enjoy life  
When making important decisions in my life, I like to consult members of my family  
Tradition and ritual serve to remind us of the rich history of our institutions and our society

**Machismo:**

For me being *machin* means always having drugs  
Being *machin* is an important part of who I am  
A woman should give in to her husband in almost all matters  
It is a man's right to drink and use drugs if he wants to  
For me, being macho is controlling my drug use  
It is *machin* to get high on any drug available  
Some drugs have the effect of making you macho  
Drug use makes my friends think I am macho  
It is macho to have lots of money and drugs  
To be macho you can never let your guard down  
Those who sell drugs are macho

**Likert scale:** 1=disagree strongly; 2=disagree; 3=agree; 4=agree strongly

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## Appendix 2

### Self-Efficacy and Risk Perception Concepts and Measures

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#### **Self Efficacy to Use Bleach:**

In the next month, how likely is it that you will clean your syringe(s)/needle(s) with bleach every time you inject drugs with others?

How sure are you that you can always use bleach to clean your syringe(s)/needle(s) if your shooting partner doesn't want you to?

How sure are you that you can always use bleach to clean your syringe(s)/needle(s) if you are in a group and people tell you it doesn't matter?

How sure are you that you can always use bleach to clean your syringe(s)/needle(s) if getting bleach is difficult?

If you are sharing a syringe/needle with other people who are injecting and no one has bleach, how sure are you that you can put off injecting drugs until you can get bleach?

How sure are you that you can always get bleach to clean your syringe(s)/needle(s) when you need it?

**Likert scale:** 0=very sure I won't; 1=somewhat sure I won't; 2=somewhat sure I will; 3=very sure I will

#### **Self Efficacy to not share needles:**

In the next month, how likely is it that you use your own syringe(s)/needle(s) every time you inject drugs with others?

How sure are you that you can always use your own syringe/needle if your shooting partner doesn't want you to?

How sure are you that you can always use your own syringe(s)/needle(s) if you are in a group and people tell you it doesn't matter?

How sure are you that you can always use your own syringe(s)/needle(s) if getting new needles is difficult?

If you are with other people and do not have your own needle, how sure are you that you can put off injecting drugs until you can get your own syringes/needles?

How sure are you that you can always get new syringe(s)/needle(s) when you need them?

**Likert scale:** 0=very sure I won't; 1=somewhat sure I won't; 2=somewhat sure I will; 3=very sure I will

#### **Self Efficacy to use condoms:**

In the next month, how likely is it that you will use a condom every time you have sex with someone besides your main sex partner?

In the next month, how likely is it that you will use a condom every time you have sex with your main sex partner?

How sure are you that you can always use a condom even if your sex partner doesn't want you to?

How sure are you that you can always use a condom even if you do not feel like using one?

How sure are you that you can always use a condom even if you are drunk or high?

If you are going to have sex with someone who is not your main partner and you do not have a condom, how sure are you that you can put off having sex until you get a condom?

How sure are you that you know the right way to use a condom to protect yourself from AIDS?

**Likert scale:** 0=very sure I won't; 1=somewhat sure I won't; 2=somewhat sure I will; 3=very sure I will. (Except for last two items which were scored: 0=very sure I can't; 1=somewhat sure I can't; 2=somewhat sure I can; 3=very sure I can)

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## Appendix 2 (Cont.)

### Self-Efficacy and Risk Perception Concepts and Measures

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#### **Perception of Risk:**

These days, how much do you believe of what you hear or read about HIV/AIDS and needle use?

0=none;1=some;2=about half;3=quite a bit;4=all

These days, how much do you believe of what you hear or read about HIV/AIDS and condom use?

0=none;1=some;2=about half;3=quite a bit;4=all

What would you say are the chances that someone you have shared needles with now or in the past has or had HIV/AIDS?

0=no chance;1=some chance;2=fifty-fifty chance;3=good chance;4=sure chance

What would you say are the chances that the person or persons you are having sex with now or in the past has or had HIV/AIDS?

0=no chance;1=some chance;2=fifty-fifty chance;3=good chance;4=sure chance

What percentage of people in the drug using community here in Nogales would you say have HIV/AIDS?

0=none;1=a few(less than half);2=about half;3=many (more than half);4=all

What percentage of people here in Nogales who exchange sex for money or drugs would you say have HIV/AIDS?

0=none;1=a few(less than half);2=about half;3=many (more than half);4=all

When you compare yourself to friends or others who shoot drugs what would you say are your chances of getting HIV/AIDS?

0=a lot lower;1=somewhat lower;2=about the same;3=somewhat higher;4=a lot higher

When you compare yourself to people who don't use drugs at all, what would you say are your chances of getting HIV/AIDS?

0=a lot lower;1=somewhat lower;2=about the same;3=somewhat higher;4=a lot higher

When you compare yourself to your friends or others who are sexually active, what would you say are your chances of getting HIV/AIDS?

0=a lot lower;1=somewhat lower;2=about the same;3=somewhat higher;4=a lot higher

Looking honestly at your drug use and sexual behaviors taken together, how risky do you see yourself being for getting HIV/AIDS?

0=not very risky;1=a little risky;2=somewhat risky;3=very risky

Which statement best describes your chances of getting HIV/AIDS?

0=no chance;1=some chance;2=fifty-fifty chance;3=good chance;4=sure chance

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