

**CHILDHOOD TRAUMA, FAMILY STRESS AND DEPRESSION
AMONG MEXICAN AMERICAN GANG
NON-INJECTING HEROIN USERS**

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Abstract

This paper examines childhood trauma, depression and psychological family and cultural stress among Mexican American male non-injecting users (NIU) of heroin in San Antonio, Texas. The research enhances the findings from a National Institute on Drug Abuse (NIDA) study, "Drug Related Gang Violence in South Texas", conducted from 1995-1997. A high rate of non-injecting heroin use among these young male Mexican-American gang members emerged as a special concern because of the serious health consequences associated with non-injecting heroin use. HIV and AIDS among Hispanics are attributed primarily to injecting drug use, followed by sexual transmission among heterosexuals and male-to-male sexual contact.

INTRODUCTION

This paper examines childhood trauma, depression and psychological family and cultural stress among Mexican American male non-injecting users (NIU) of heroin in San Antonio, Texas. The research enhances the findings from a National Institute on Drug Abuse (NIDA) study, "Drug Related Gang Violence in South Texas", conducted from 1995-1997. During the course of this study, the high rate of non-injecting heroin use among these young male Mexican-American gang members emerged as a special concern because of the serious health consequences associated with non-injecting heroin use. Funding obtained from the Hogg Foundation

supported the administration of three psychometric instruments. The instruments included: the Childhood Trauma Questionnaire (CTQ), the Center for Epidemiological Studies Depression Scale (CESD), and the Hispanic Stress Inventory (HSI) Family/Cultural Conflict Subscale. These instruments measure psychosocial dimensions that have been linked to drug abuse and other problems associated with delinquent youth and young adults.

Hispanics in the United States, the fastest growing minority group, are a heterogeneous population by ethnicity, generation, and region of residency (U.S. Census 2000). Moreover, Hispanics in the United States have higher rates of human immunodeficiency virus (HIV) than does the

population in general. AIDS is currently the sixth leading cause of death among Hispanic adults, compared to the tenth leading cause among non-Hispanic whites. The Centers for Disease Control and Prevention (CDC) recently reported that 18% of all AIDS cases were Hispanic (CDC 1999). For Hispanics, the prevalence of AIDS is almost double their proportion (10%) of the total population. In 1998, 7,511 Hispanic men were diagnosed with AIDS in the United States. Of these cases, 29% (2,164) were attributed to injecting drug use (IDU), and 8% (638) were infected heterosexually. In the same year, 2,055 Hispanic women were diagnosed with AIDS, 44% of whom were infected heterosexually, mostly through contacts with male injecting drug users. Hispanic women had a higher proportion of cases attributable to sexual contact with an injecting drug user than any other racial/ethnic group. Overall, HIV and AIDS among Hispanics are attributed primarily to injecting drug use, followed by sexual transmission among heterosexuals and male-to-male sexual contact.

Problems in Perspective: Non-Injecting Users

There has been a dramatic increase in the use of non-injecting heroin over the last several years (French and Safford 1989; Schottenfeld and O'Malley 1993; Ouellet and Jimenez 1993; Community Epidemiology Work Group 1999). The emergence of large numbers of non-injecting heroin users has

important implications for HIV transmission among Hispanic injecting drug users (IDUs), IDUs in general, and their sexual partners. Many drug users begin using heroin as a non-injecting user (NIU), but later transition to injecting (Des Jarlais and Casriel 1992; Strang and Griffiths 1992; Strang, Des Jarlais, Griffiths, Powis, and Gossop 1992; van Amerijden and van den Hoek 1994). If non-injecting users (NIUs) transition to injecting and use contaminated syringes or other contaminated injecting equipment, then they are at high risk of acquiring and transmitting HIV as well as Hepatitis B (HBV) and Hepatitis C (HCV).

The overall increase in heroin use among youth has also been identified by several sources. Most new users are under the age of 26 and were smoking, snorting, or sniffing heroin rather than injecting. The National Institute on Drug Abuse (NIDA 1995) issued a report, "Heroin Update: Smoking, Injecting Cause Similar Effects: Usage Patterns May be Shifting," which studied subjects who used heroin non-intravenously. NIDA reported an increase in heroin use overall, although the mode of administration had changed (NIDA 1995). NIDA attributes this increase, in part, to the availability of high quality heroin and the common belief that non-injecting heroin is low risk for addiction. Nevertheless, while many start out sniffing or snorting heroin, they may transition to the next step, injecting (Strang et al. 1992), and may also become involved in other high risk behaviors

that are related to HIV/AIDS. In addition to the intranasal use of heroin, an ethnographic study of San Antonio heroin users conducted by Ramos and colleagues (Ramos, Shain and Johnson 1995) found that a large number of adult respondents smoked heroin. He reported that heroin was smoked in a marijuana or regular cigarette called a "primo."

Non-Injecting and Injecting Heroin Use and Its Implications in San Antonio

San Antonio has a population of approximately 1.4 million persons (U.S. Census 2000), 54% of whom are persons of Mexican origin. The vast majority of these persons are second and third generation Mexican Americans. Arrestee Drug Abuse Data (ADAM) historically has reported that those Mexican American youth (males and females) who have been arrested more frequently test positive for heroin use than other groups in San Antonio. ADAM statistics for Mexican American youth between 1995-1999 indicate an increase in heroin use among these arrestees. However, for adults there was a slight decrease in arrestees testing positive for heroin for the ADAM sample during this time period (ADAM 2000).

San Antonio, over the years, has had a relatively high rate of heroin use compared to other large cities (Desmond and Maddux 1984; DUF 1995, 1996; ADAM 1998). An increasing number of these heroin users are reportedly using heroin intra-nasally and by other non-

injecting methods (Maxwell 1999; Ramos, Aguilar, Anderson and Caudillo 1999). Recent data on male heroin users entering publicly funded drug abuse treatment centers in the state of Texas in 1998 indicate that nine percent reported intranasal use (CEWG 1999). Using a capture-recapture statistical method, the Texas Commission on Alcohol and Drug Abuse (TCADA) estimates that the number of heroin users in San Antonio (Bexar County) is approximately 8,936. Based on state and county treatment data, we estimate that over 80% of these heroin users are Mexican Americans (Maxwell 1999). We also know that 7% of clients (whose primary drug of choice was heroin), admitted to publicly funded treatment facilities in San Antonio, reported non-injecting heroin use. There is an average lag of nine years between the first regular use of heroin and the initial date of treatment admission for all heroin users in Texas (Maxwell 1999). This percentage is likely to underestimate the extent of non-injecting heroin use in Texas in the population at large. In previous studies we encountered increasing rates of NIUs (heroin) among the Mexican American population. These observations are derived from studies on Mexican American male gang members, female adolescents associated with these male gang members, and an estimation study of heroin users (Yin and Valdez 1996; Valdez and Kaplan 1995).

In 1998, there were a total of 237 AIDS cases in San Antonio, with

Mexican Americans comprising 61% of the cases. Although the recent prevalence of HIV among IDUs in San Antonio at 3% (Holmberg 1996) is low, the prevalence of Hepatitis C (HCV) is extremely high at 85% to 90% (Zule and Desmond, under review). Drug injectors in San Antonio may be at extremely high risk of acquiring HCV. In a study conducted between November 1997 and November 1998 among 397 active drug users (NIUs and IDUs), 87% of the subjects with a history of IDU were seropositive at baseline compared to 22% of those without a history of injection. Among the 15 injectors who were seronegative at baseline, four were HCV positive at follow-up. The computed annual incidence rate was close to 50% (Zule and Desmond, under review). None of the non-injectors became infected with HCV. HCV follows a similar route of transmission as HIV, primarily through blood-to-blood contact associated with injecting drug use, indicating that the behavioral and risk network conditions for an epidemic outbreak of HIV in San Antonio may already be present.

HIV can spread rapidly through IDU populations at an alarmingly high rate. For example, after a long period of low prevalence of HIV among IDUs in Vancouver, British Columbia, HIV rose to a level of 25% (Strathdee, Patrick et al. 1997); and in Odessa, Ukraine, HIV among IDUs in the span of one year increased from 1.4% in January 1995 to 31% in January 1996. Similar rapid upsurges in HIV prevalence among IDUs have

occurred in a number of other cities, particularly in cities that have undergone major changes in the drug use environment, such as disruptions and shifts in drug markets and increases in injecting drug use (Rhodes 1999). Thus, an increase in non-injecting heroin use among Mexican Americans in San Antonio, in the context of high HCV prevalence among IDUs in that city, may indicate that the risk for an epidemic outbreak of HIV among IDUs in San Antonio has greatly increased.

The emergence of large numbers of non-injecting heroin users has important implications for HIV transmission among IDUs since there is a substantial risk of NIUs transitioning to injecting and then becoming infected with HIV, HBV, and HCV, which are also transmitted through injecting with contaminated equipment. Van Ameijden and van den Hoek (1994), in a study of 184 NIUs in Amsterdam, reported that 33% ($n=60$) had injected by follow-up. The non-injected use of heroin was a predictor of becoming an injector.

Cultural Perspective with Regard to Heroin Use

Cultural differences among, between, and within racial/ethnic groups may be associated with differences in the rate of transitioning to injecting. For example, differences in the degree of aversion to needles or of stigmatization of IDUs might affect the rate at which NIUs become injectors (Shedlin and Deren 1992;

van Ameijden and van den Hoek 1994; Griffiths and Gossop 1992).¹

One aspect of Hispanic culture that has direct relevance to the risk of transitioning to injecting is the meaning of needle use among Hispanics. A study of Dominican, Mexican, and Puerto Rican drug-using women found that needle use was less stigmatized between Mexican and Puerto Ricans than among Dominicans (Deren and Shedlin 1997). Among Mexicans, the meaning of needle use may be affected by the extent by which needles are used in other legal contexts, e.g. injecting vitamins and antibiotics. The fear of using needles, which is often cited by non-injecting heroin users as a reason why they do not inject (Neaigus and Friedman 1998a; Sotheran, Goldsmith et al. 1999), may be lessened if friends and relatives inject in a legal context. Thus, cultural norms and practices which legitimize injecting needle use, as well as reinforcement of this cultural trait by observing and/or knowing about social network members who engage in the practice, may be a determinant of transitioning to injecting among Mexican American NIUs.

The extent to which Mexican American NIUs are acculturated to the dominant United States culture may also influence their risk for transitioning to injecting. Acculturation refers to the process of cultural learning and behavioral adaptations that take place when an individual is exposed to a new culture. Latinos have varying levels

of acculturation, depending on the number of years lived in the United States and an individual's generational status. High levels of acculturation have been associated with substance abuse among Latinos (Amaro, Whitaker et al. 1990; Vega and Gil 1998; de la Rosa, Khalsa and Rouse 1990). Other cultural measures such as ethnic identity, familism, and gender roles have also been associated with drug use among Latinos (Amaro et al. 1990; Mendoza 1989; Vega, Zimmerman, Gil, Warheit and Apospori 1993; Felix-Ortiz and Newcomb 1995; Cervantes, Padilla and Salgado de Snyder 1991).

Mental Health Issues with Regard to Substance Abuse

Previous traumatic events that occur in early childhood may make some individuals more susceptible to begin using heroin non-parenterally (NIU), and then to progress to injecting. Childhood trauma has been defined as including physical, psychological, and sexual abuse (Bernstein, Ahlulvia, Pogge and Handelsman 1997; Medrano, Zule, Hatch, and Desmond 1999b). For women and (although less studied) for men, a prior history of sexual abuse may be a predisposing factor among non-injecting heroin users to progress to injecting drugs. Early substance use, including injecting drugs, by sexually abused women may be an attempt to self-medicate against the psychological pain associated with such trauma (Fullilove, Lown and Fullilove 1992;

Rohsenow, Corbett and Devine 1988; Root 1989; Paone, Chavkin, Willets, Friedman and Des Jarlais 1992; Seligman 1992). This problem has been described as being even more acute among Mexican American and other Latina women (Amaro 1995; Amaro, Nieves, Johannes, Cabeza and Nirzka 1999; Medrano, Desmond, Zule and Hatch 1999a; Medrano, Zule, Hatch and Desmond 1999b). In addition, high levels of physical and emotional abuse are often more prevalent among substance abusing populations (Medrano et al. 1999a; Cohen and Stahler 1998).

The relationship between depression and substance use is not as clear as that between childhood abuse and substance use, but associations between the two have been documented (Neighbors, Kempton, and Forehand 1992; Khantzian 1985). Depression may be a result of differing factors, including the stress of everyday life events. Mexican immigrants have been reported to have lower levels of depression in certain areas than do Mexican Americans born in the United States (Cervantes and Castro 1985). Among Mexican Americans, stressful events and how stress is perceived may differ from other ethnicities and even within their own ethnic group. The acculturation of Latinos has been linked to many behavioral problems among adolescents including poor school performance, delinquency, and substance abuse (Perrino, Gonzalez-Soldevilla, Pantin, and Szapocznik

2000; Szapocznik, Scopetta, Kurtines, and Aranalde 1978). Additionally, there exists an inter-generational problem among Latino adolescents who exhibit high levels of acculturation, relative to their parents, and also reject the culture of origin to which the parents often continue to adhere (Santisteban, Szapocznik, and Kurtines 1994). Moreover, as acculturation increases, the quantity and frequency of substance use increases as well, approximating the pattern in non-Hispanic whites (Caetano and Medina Mora 1988).

Depression, however, has been linked to substance abuse among adolescents in a number of other studies (Coelho, Rangel, Ramos, Martins, Joana and Barros 2000; Capaldi 1992; Neighbors et al. 1992; Simons, Whitbeck, Conger, and Melby 1991). These studies have theorized that substance use is a stress and coping mechanism for adolescents in order to help them calm down when they are depressed (Miller-Johnson, Lochman, Coie, Terry, and Hyman 1998). In addition, depression in adolescents was found to be related to life events and the psychosocial environment of the subjects at home, school, and with peers (Steinhausen and Metzke 2000). It has been shown in other studies that depressive mental disorder is one of the most common mental disorders in adolescents (Lewisohn, Rohde, Seeley, Klein, and Gotlib 2000; Lewisohn, Hops, Roberts, Seeley, and Andrews 1993).

The aim of this study is to

determine the relationship between acculturative and family stress, depression, and childhood trauma to high-risk substance use between two groups of Mexican American males, NIU gang members and a matched community sample of NIUs. High-risk substance users are identified as individuals in this population who are non-injecting heroin users. The study also addresses the relationship between these three psychological factors and the risk of transitioning to injecting heroin and other high-risk substance abuse behaviors.

METHODS

Study Design

The NIDA parent study, "Drug Related Gang Violence in South Texas," examined the epidemiology of violence and drug use among male members of 26 Mexican American gangs in San Antonio. The purpose of the study was to identify and distinguish the relationship of gang violence, illicit drug use, and high-risk sexual behavior. Three data collection methods were used: (a) focus groups, (b) social and economic indicators and (c) life history/intensive interviews. A supplementary cross-sectional descriptive study was designed to further explore specific high-risk drug behaviors within this population. This supplemental study measured childhood trauma, depression and family stress using standardized psychometric instruments in a sample of 25 self-identified male gang members who are also non-injecting heroin

users (NIU) and a matched comparison group of 25 community male NIUs. The study design is cross-sectional and descriptive, allowing for comparisons on levels of childhood abuse and neglect and depression among NIU gang members, NIU community members, and to other groups.

In the original NIDA study, a stratified proportional sample of 160 persons was drawn from the rosters of 26 male gangs and administered the life history/intensive interview (Yin and Valdez 1996). For this study, the sub-sample of 25 NIU gang members was selected from the gang rosters collected during the NIDA study. Originally, 37 gang members reported recent NIU heroin use (within the last 30 days). Of these 37, fourteen were re-contacted and administered the instruments relevant to this study. The remaining 23 were not located, either because they were incarcerated ($n=11$), had moved out of town ($n=3$), or could not be located because they were either fugitives or in hiding ($n=9$). An additional 11 gang members from our original NIDA sample were identified as NIUs and were also administered the instrument.²

Sample Criteria

The gang sample roster included all gang members who reported NIU heroin use in the NIDA gang study who could be located.³ Sample inclusion criteria for the community sample required that study subjects (SS) report having used non-injecting heroin in the last 30 days. Inclusion

in the non-gang NIU community sample also required that these SS have no current injecting heroin use. The inclusion criterion for a "non-gang member" was defined as not belonging to a gang within the preceding six months.

The process of selecting the 25 NIU community members involved nominations from the gang members. We utilized snowball sampling techniques in order to identify the comparison group ($N=25$). By using both gang and non-gang referrals, we were able to tap into a wide range of NIUs in the targeted area. All participants were drawn from nine defined geographic areas of San Antonio. These areas are located on the west and south sides of the city and have the highest level of gang activity. None of the nominated community members refused to participate. Although this study's primary objective is focused on heroin use, the population from which the gang sample was drawn ($N=160$)

reported high rates of current (the last 30 days), marijuana (75%), cocaine (53%), and heroin (26%) use in their initial interviews. While this data was not gathered for this study's sub-sample of 25 gang members, these previously gathered data reflect characteristics that can be generalized to them.

INSTRUMENTS

Non-Injecting Heroin Use Community and Gang Short Form Questionnaire

This instrument consists of five components: (1) demographics, (2) gang and community information, (3) heroin use patterns, (4) NIU nominations and referrals, and (5) locator items. These measures allow for assessing the study subjects' lifetime and current mode of heroin use as well as frequency of use. Questions regarding injection risk practices are also included for those gang members who have transitioned

Table 1. Social Characteristics by Gang, Community, and Total Samples (Percentage and Means)

	Gang ($N=25$)	Community ($N=25$)	Total ($N=50$)
Mean Age	22	20	21
Mean Education level	9.2	9.4	9.3
Marital status: (Percent)			
Single	52	72	62
Married	12	4	8
Common law / Live-in	32	20	26
Other	4	4	4
Employed (either full- or part-time) (Percent)	48	40	44
Been arrested in last 12 months	44	52	48
Family member(s) use heroin	48	56	54

to injecting heroin since the initial interview as well as those in the community sample who had injected in the past. In addition, the questionnaire examines the social networks of the subjects which include gathering information on friends and family members who also use heroin. The nomination and referral section allows for estimations to be made on this hidden population of high-risk substance users.

Childhood Trauma Questionnaire (CTQ)

The Childhood Trauma Questionnaire (CTQ) is a 28 item self-administered instrument that assesses the experiences of abuse and neglect in childhood and adolescence. The CTQ consists of five clinical subscales: emotional abuse, emotional neglect, physical abuse, physical neglect, and sexual abuse. Each subscale consists of five items. The CTQ also includes three items that are used as a minimization/denial scale.⁴

Emotional abuse is defined as "verbal assaults on a child's sense of worth or well-being, or any humiliating, demeaning, or threatening behavior directed towards a child by an adult or older person" (Bernstein et al. 1997). This subscale includes such items as: being insulted and humiliated by family members, the child feeling that the parents wished they had never been born, feelings of being hated, and believing they were emotionally abused.

Emotional neglect refers to the "failures of the caretakers to provide

for a child's basic emotional needs, such as love, encouragement, belonging and support" (Bernstein et al. 1997). Items associated with emotional neglect include: no one in the family making the child feel special or loved, the child's feeling that the family is neither close nor supportive of each other, and the child's feeling that the family was not a source of strength or support. Physical abuse is described as "bodily assaults on a child by an adult or older person that poses a risk of or result in injury" (Bernstein et al. 1997). Items used for this subscale include being hit with belts, boards, or cords, being hit so hard the child either had to seek medical treatment or bruises were noticed by a neighbor or teacher, and the child feeling that he was physically abused.

The physical neglect is referred to as the "failure of caretakers to provide for a child's basic needs, including food, shelter, safety, supervision, and health" (Bernstein et al. 1997). Items comprising this subscale are not having enough to eat, having to wear dirty clothes, not being taken to the doctor when necessary, having parents too drunk or high to take care of the child, and the child not feeling protected.

The sexual abuse subscale measures "sexual contact or conduct between a child and an older person; explicit coercion is a frequent but not essential feature of these experiences" (Bernstein et al. 1997). Items include someone trying to touch the child in sexual ways or forcing the

child to touch the adult in sexual ways, threatened with being hurt unless the child did something sexual with the adult, forcing the child to watch sexual things, a child having been molested, and a child's feeling that he was sexually abused.⁵

Center for Epidemiological Studies Depression Scale (CESD)

The Center for Epidemiological Studies Depression Scale is a 20-item self-administered depression symptom scale validated among adolescents and young adults (Radloff 1991). The instrument asks the respondent to identify how often he/she experienced different feelings or emotions in the week prior to administration. The items on the scale are symptoms associated with depression that were chosen from previously validated scales. The respondent answers on a four-point Likert scale in which 0 indicates "rarely or none of the time (less than 1 day)", 1 "some or a little of the time (1-2 days)", 2 "occasionally or a moderate amount of time (3-4 days)", and 3 "most or all of the time (more than 4 days)." The scoring of three items on the scale was reversed in order to be consistent with the other items, with higher scores indicating higher levels of depression. The total CESD score ranges from a low of 0 to a high of 60.⁶ This cutoff score is used in this study in order to determine high levels of depression.

Hispanic Stress Inventory (HSI) Family/Cultural Conflict Subscale

The Hispanic Stress Inventory

(HSI) is a culturally sensitive instrument developed to assess psychological stressors among U.S. Hispanics (Cervantes, Padilla, and Salgado de Snyder 1990; Cervantes, Padilla, and Salgado de Snyder 1991). The HSI is self-administered and asks the respondent to indicate whether the stressor incident described in each item has occurred to him/her in the last three months. If the respondent answers in the affirmative, then he/she must appraise on a five-point Likert scale how tense or worried the event made him/her.⁷

There are two versions of the HSI, one for immigrant families and one developed for U.S. born Hispanics. This study utilized the latter, which in its entirety, consists of 59 items and 4 subscales: Family/Cultural Conflict (22 items), Marital Stress (14 items), Parental Stress (9 items) and Occupational Stress (14 items). We utilized only one subscale, the Family/Cultural Subscale in a 13-item format. Thus, the *Stress Event Frequency Score* ranges from 0-13 and the *Stress Event Appraisal Score* ranges from 13-65.

DATA ANALYSIS

Means and standard deviations of the total scale and item scores on the psychometric instruments were analyzed for the gang and community samples. Assuming that the two groups would have significantly unequal variances, differences between the two samples were calculated using an independent samples

t-test. Pearson product correlations among the total and subscale scores on the instruments were calculated separately for the gang and community samples.

A reliability analysis of each of the three instruments was also conducted. Cronbach Alpha reliability coefficients were calculated on the pooled samples using the covariance matrix method. The reliability of the CESD total scale ($\alpha=0.87$) and three of the CTQ subscales, physical abuse ($\alpha=0.76$), emotional abuse ($\alpha=0.86$), and emotional neglect ($\alpha=0.81$) were acceptable. The physical neglect scale scored a lower reliability ($\alpha=0.55$). The sexual abuse scale yielded a very low reliability and thus was not considered in the analysis for this particular population.⁸ For the HSI, a reliability analysis of the Stress Event Frequency items yielded an adequate score with this population ($\alpha=0.76$), as well as an adequate score for the Stress Event Appraisal items ($\alpha=0.79$). These two alpha scores indicate that all 13 items of the Family/Cultural Conflict subscale produce a relatively reliable scale of psychosocial stress.

RESULTS

Heroin Use Patterns and Transition to Injecting Drug Use

Table 2 presents heroin use characteristics associated with the study's gang and community populations. One of the major findings from this data is that 60% ($n=15$) of the gang sample had transitioned to

injecting drug use from the initial gang interview. Nearly the same percent (64%) were currently using heroin, although among those only 44% ($n=7$) were current injectors. This is an exceptionally high transition rate when compared to other NIU populations (Neaigus 1998b).

Data also indicate that 28% of the community sample injected other drugs compared to only 5% of the gang sample. Fieldwork findings provide evidence that another drug they commonly injected was cocaine. Interestingly, approximately 86% of both groups indicated they have attempted to quit using heroin. This figure is more significant when compared to the small percent of both groups reported they have overdosed on heroin at one point in their lives. These findings suggest age of those that have been in treatment in the past year (12%). There is a need for more intervention and treatment services in this community.

In regards to current users among the gang sample, other methods of ingestion of heroin included intranasal use/snorting (88%) and, "shabanging" (25%). Shabanging is a method of nasally ingesting heroin mixed with water, usually through a nose dropper. These data clearly indicate that current heroin users used multiple modes of ingestion. The community sample also used various methods of ingestion including snorting (100%), shabanging (48%) and a couple even smoked or inhaled (popularly known

Table 2. Heroin Use Characteristics by Gang, Community and Total Samples (Percentage)

	Gang (N=25)	Community (N=25)	Total (N=50)
Lifetime Drug Use			
Ever injected heroin	60**	28	44
Ever tried to quit using heroin	5	28	24
Been in treatment in last 12 months	84	88	86
Ever overdosed on heroin	8	16	12
Current heroin use (past 30 days)	64*	100	82
Mode of Ingestion:			
	(N=16)	(N=25)	(N=41)
Inject	44	0	17
Snort	88	100	95
Shabang	25	48	39
Smoke/Inhale	0	4	2

*Data indicates use at the time of the initial NIDA interview (1996/1997).

** The transition rate could only be calculated for the gang sample

Table 3. Heroin Use and Needle Sharing Practices by Gang, Community and Total Sample (Percentage)

	Gang (n=15)	Community (n=7)	Total (n=22)
Those who have injected who have:			
Shared a syringe	47	78	58
Backloaded/frontloaded a syringe	20	33	25
Shared a cooker, cotton filter, or rinse water	80	89	83
Rented a syringe	13	22	17
Injected in a "shooting gallery"	53	56	54

as "chasing the dragon").

High-Risk Needle Use Practices

Table 3 indicates that 44% (n=22) of the combined gang and community sample reported a history of injecting heroin. Over half (58%) of the injectors had shared a syringe with another user. This appears to be more prevalent in the community sample, with over three-fourths

(78%) of those that had injected reporting such needle sharing practices. Over half of the respondents have injected heroin in a "shooting gallery", a place where other injectors go to shoot up, often paying cash or in kind in order to utilize the space. Another alarming figure is that one-third of the community respondents and one-fifth of the gang sample admitted to

"backloading" or "frontloading" their syringes (injecting with a syringe that another injector squirted drugs into from his/her syringe). Finally, over

80% of the injectors reported they had shared a cooker, filter or rinse water with other injecting drug users. These high-risk behaviors make

Table 4. Childhood Trauma Questionnaire: Items, Scales and Total Means and Standard Deviations

	Gang		Community	
	Mean	SD	Mean	SD
Emotional Abuse Scale	8.48	3.99	9.40	4.86
People in my family called me things like "stupid", "lazy" and "ugly".	2.24	1.36	2.20	1.15
I thought my parents wished I had never been born.	1.28	0.84	1.56	1.04
People in my family said hurtful or insulting things to me.	2.12	1.13	1.96	1.24
I felt that someone in my family hated me.*	1.44	0.82	2.16	1.40
I believe that I was emotionally abused.	8.20	4.03	7.56	3.44
Physical Abuse Scale	8.20	4.03	7.56	3.44
I got hit so hard by someone in my family that I had to see a doctor or go to the hospital.	1.44	1.16	1.12	0.33
People in my family hit me so hard it left me with bruises or marks.	1.96	1.40	1.44	0.96
I was punished with a belt, a cord or some other hard object.	2.16	1.46	2.36	1.32
I believe that I was physically abused.	1.36	0.81	1.28	0.84
I got beaten so badly that it was noticed by someone like a teacher, neighbor or doctor.	1.28	0.68	1.36	0.91
Emotional Neglect Scale	11.24	4.76	9.56	3.62
There was someone in my family who helped me feel important or special. (R)	2.12	1.09	1.84	1.11
I felt loved. (R)	2.32	1.31	1.80	0.96
People in my family looked out for each other. (R)	2.12	1.33	1.84	0.90
People in my family felt close to each other. (R)	2.32	1.31	2.04	0.93
My family was a source of strength and support. (R)	2.36	1.38	2.04	0.84
Physical Neglect	7.72	2.98	8.48	2.99
I didn't have enough to eat.	1.64	0.95	2.04	1.57
I knew there was someone in my family to take care of me and protect me. (R)	1.56	0.92	1.72	1.02
My parents were too drunk or high to take care of me.	1.48	0.92	1.76	0.93
I had to wear dirty clothes.	1.44	0.92	1.28	0.61
There was someone to take me to the doctor if I needed it. (R)	1.60	0.91	1.68	1.03
Total	35.64	12.88	35.20	11.02

* Significant at 0.05 level (R) Item reversed

these users highly susceptible for HIV/AIDS and Hepatitis B and C infections.

Childhood Trauma Questionnaire (CTQ)

Findings related to the CTQ are presented in Table 4. There was no significant difference between the two groups on the total score or on any of the subscales. Only one item, "I felt that someone in my family hated me," on the emotional abuse subscale proved to be statistically significant. Here, the NIU community respondents scored higher ($t=-2.2, p<0.032$) than the gang members. However, there were some trends found among the four subscales when comparisons were made. For instance, on the emotional neglect subscale gang members tended to score higher than the other group.

On the physical neglect subscale there was a tendency for the community sample to experience higher scores, except for the item, "I had to wear dirty clothes."

Figures 1-4 show four levels of severity ("none or minimal," "low to moderate," "moderate to severe," "severe to extreme") on the five subscales for both the NIU gang sample and community sample. Figure 1 indicates that the two groups are closely matched in experiencing "none or minimal" levels of emotional abuse (60% v. 56%).

The community members were three times as likely as the gang members to have experienced extreme levels of emotional abuse (12% v. 4%), as well as having higher levels of moderate to severe abuse (12% v. 8%). Figure 2 indicates that the community mem-

Figure 1. Levels of Emotional Abuse by NIU Gang Members and Community Sample

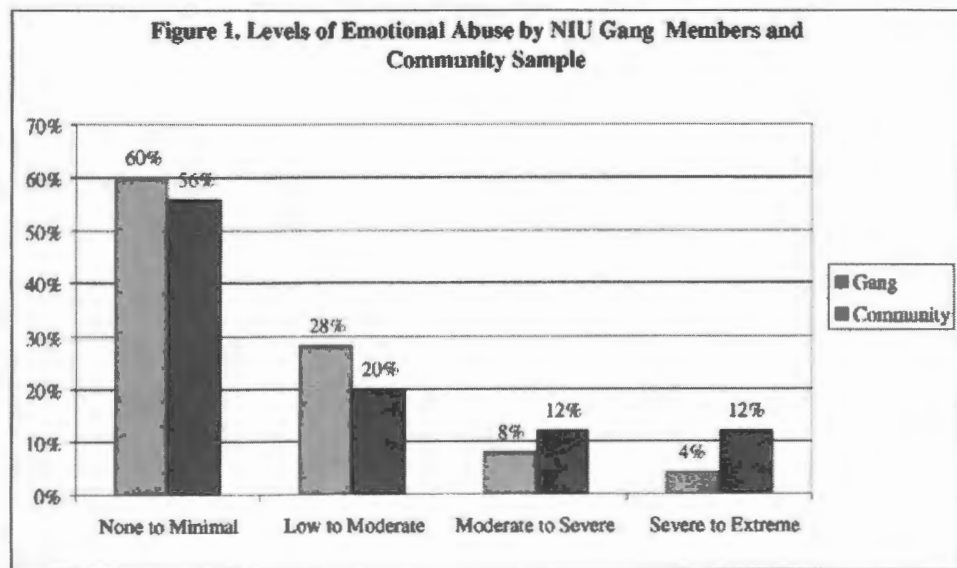


Figure 2. Levels of Physical Abuse by NIU Gang Members and Community Sample

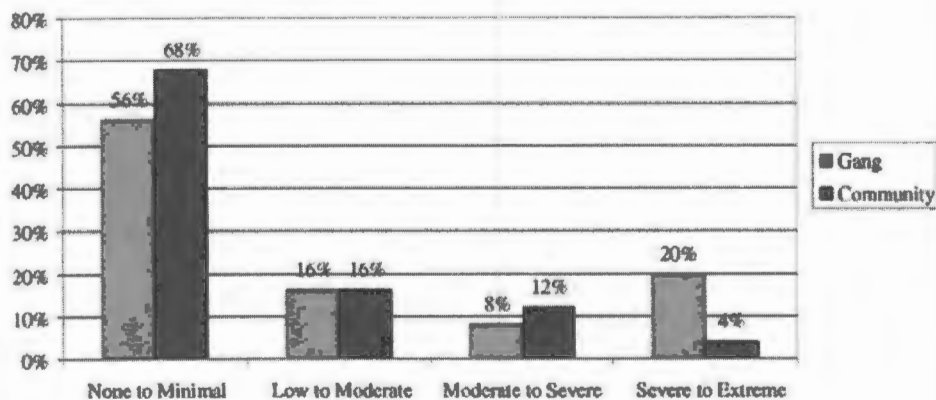
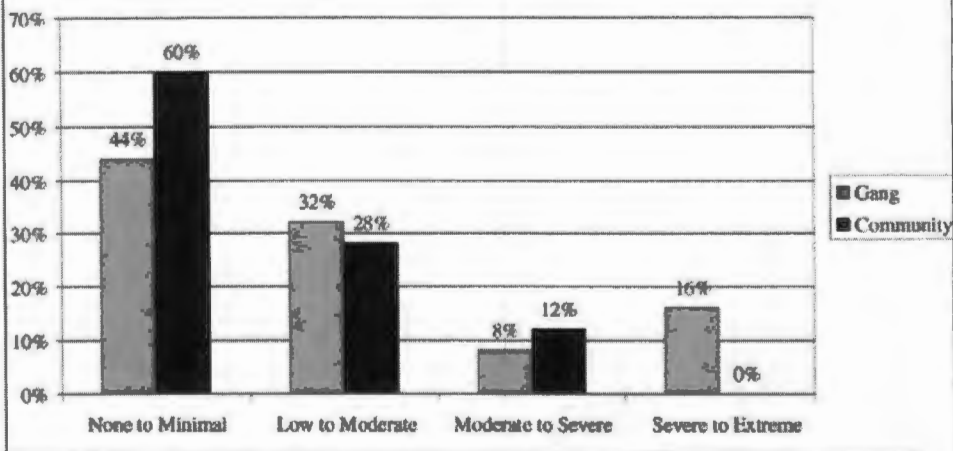


Figure 3. Levels of Emotional Neglect by NIU Gang Members and Community Sample



bers were more likely to have no or minimal levels of physical abuse (68% v. 56%). In addition, the NIU gang members are five times more

likely to have experienced extreme levels of physical abuse than the NIU community sample (20% v. 5%).

Figure 3 presents the emotional

neglect data. Sixty percent of the community sample indicated minimal levels of emotional neglect compared to 44% of the gang respondents. In contrast, 16% of the gang members reported severe to extreme levels of emotional neglect while none of the community members reported this level of emotional neglect. These data indicate that community respondents had lower levels of emotional neglect overall than the gang members, although this was not statistically significant. Figure 4 indicates that the community sample was more likely to have experienced physical neglect in their childhood. They were twice as likely to have experienced moderate to severe levels of physical neglect than the gang cohort (24% v. 12%). Yet, in terms of severe to extreme levels of physical neglect the two groups were

equal (12%).

Figure 5 provides the mean scores for the NIU gang and community sample, a sample of substance-abusing men in San Antonio ($N=361$) (M. Medrano, personal communication, February 17, 2001), and a group of male undergraduate volunteers (Berstein et al. 1997). The two NIU matched with the sample of drug-abusing men. In fact, as this graph shows, there is no outlier in this group. Even the undergraduate group is matched with the other three samples on most of the scales. The NIU community sample has the highest emotional abuse score (9.4), followed closely by the drug-using male sample. Interestingly, the gang members and undergraduate volunteers reported virtually the same amount of emotional abuse.

The NIU gang members and male

Figure 4. Levels of Physical Neglect by NIU Gang Members and Community Sample

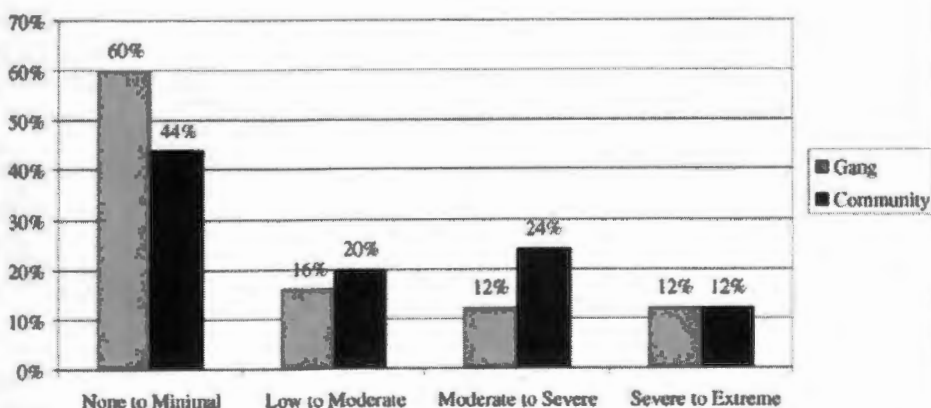


Figure 5. CTQ Subscale Means for NIU Gang Members, NIU Community Sample, Sample of Drug-Using Males and Undergraduate Volunteers

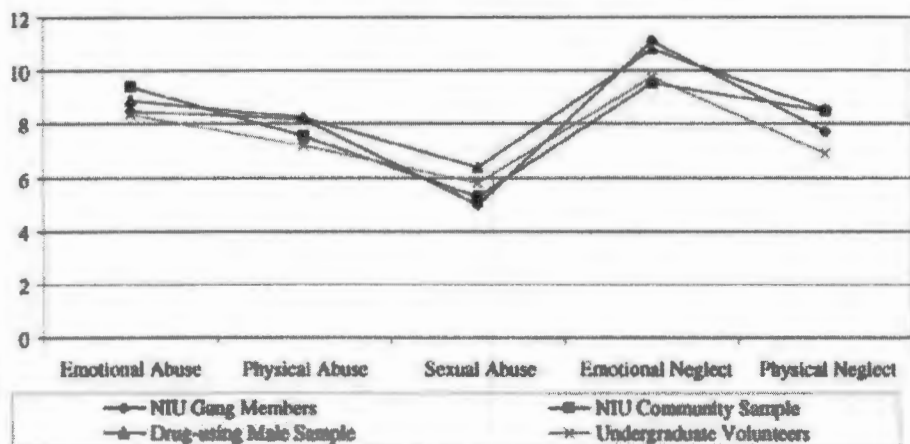
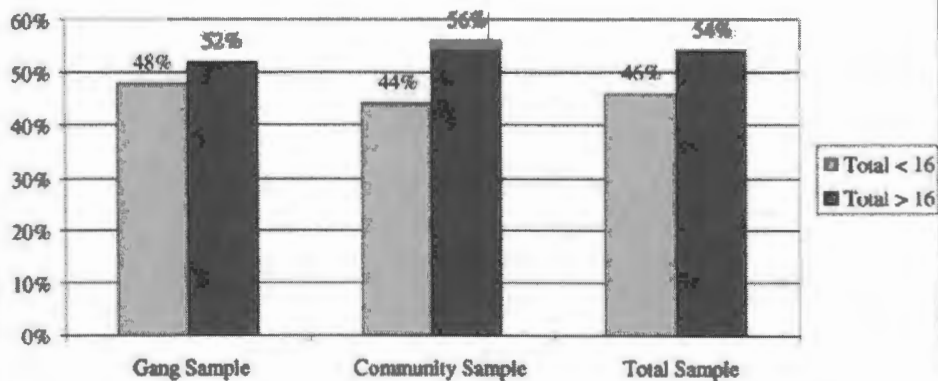


Figure 6. Subjects Scoring 16+ on the CESD by Gang, Community, and Total Samples (Percentage)



drug-users were the highest on the physical abuse subscale (8.2), and the undergraduates had the lowest score (7.2). The sample of drug-

using males had the highest score on the sexual abuse subscale (6.4), and the gang members had the lowest (5.0). The NIU gang members had

the highest level of emotional neglect (11.1), with the NIU community sample reporting the lowest (9.6). The sample of drug-using males and the NIU community sample had the highest levels of physical neglect (8.5), with the undergraduates reporting the lowest (6.9). Overall, the NIU gang members' childhood trauma scores were quite similar to the NIU community members and the drug-using sample from Medrano's study. However, out of these four samples, it would be difficult to assess which group experienced the highest levels of overall childhood trauma. Even the undergraduate group reported higher levels of sexual abuse than either NIU sample and the undergraduates were on par with the gang members in regard to emotional abuse.

Center for Epidemiological Studies Depression Scale (CESD)

Figure 6 presents the percentage of gang, community, and total sample respondents who scored in the 16+ range on the CESD scale. As previously mentioned, this is the mean cutoff score that has been established to indicate high levels of depression in respondents. Our results reveal that 52% of the gang members and 56% of the community NIUs scored in this range (54% of our total sample). Both groups scored well above the cutoff mean score of 16 (gang: $x=20.08$, community: $x=18.44$).

Individual item findings related to the CESD for both the community and gang sample are presented in

Table 5. Only one item was found to be statistically significant, "I talked less than usual." Here, the NIU gang sample scored significantly higher than the community sample ($t=2.38$, $p<0.022$). Overall, there was no significant difference between the two groups in the total score.

However, what is significant with this scale is the unusually high percentage of respondents who are classified as depressed by scoring 16 or greater on the CESD. As there was only one item on this scale which was significantly different, the high total scores for both groups were due to their similarities rather than their differences. Both groups scored high (cumulative percent of one day or less) on items such as "I was bothered by things that don't usually bother me" (68% gang v. 72% community), "I did not feel like eating" (64% v. 64%), "I had trouble keeping my mind on what I was doing" (68% v. 72%), and "I felt that everything I did was an effort" (80% v. 84%). In addition, 88% of the gang members reported that their sleep was restless during the past week and 68% of the community sample felt sad the week before the interview.

Hispanic Stress Inventory (HSI) Family/Cultural Conflict Subscale

Results from the Family/Cultural Conflict subscale of the HSI indicate that both the gang and the community samples are experiencing average levels of psychosocial stress when compared to a large normative sample (Cervantes et al. 1991). Both

samples reported having experienced, on average, about five stressor events in the past three months prior to survey administration (gang and community: $x=5.24$). For example, 76% of the gang sample ($n=19$) and 68% of the community sample ($n=17$) indicated that "having a serious argument with a family member" was a recent stressor. In addition, "conflicts among members of the family" was another stressor, in which 68% of the gang sample and 52% of the community sample an-

swered affirmatively. Fifty-six percent in both samples ($n=14$) replied that "having an argument with other members of their family because they have different customs" was also a stressor, pointing to the importance of culture change and "acculturation stress" that is often described by researchers and clinicians working with similar families. Another family stressor identified equally by both groups (60%, $n=15$) was that the respondents felt they have been around too much violence.

Table 5. Percentages, Means, and Standard Deviations on Items on the Center for Epidemiological Studies Depression Scale (CESD) by NIU Gang Members and Community Samples – Gang Members

Items	Gang				x
	None	1-2 days	3-4 days	>4 days	
I was bothered by things that don't usually bother me.	32	56	8	4	0.84
I did not feel like eating; my appetite was poor.	32	28	24	12	1.12
I felt that I could not shake off the blues even with the help of my family or friends.	40	36	16	8	0.92
I felt that I was as good as other people. (R)	36	20	20	24	1.32
I had trouble keeping my mind on what I was doing.	32	40	16	12	1.08
I felt depressed.	48	24	12	16	0.96
I felt everything I did was an effort.	20	24	16	40	1.76
I felt hopeful about the future. (R)	44	16	12	28	1.24
I thought my life had been a failure.	60	20	12	8	0.68
I felt fearful.	52	20	12	16	0.92
My sleep was restless.	12	52	16	20	1.44
I was happy. (R)	40	24	24	12	1.08
I talked less than usual.	28	32	16	24	1.36
I felt lonely	52	24	8	16	0.88
People were unfriendly.	60	24	12	4	0.60
I enjoyed life. (R)	68	12	8	12	0.64
I had crying spells.	68	20	4	8	0.52
I felt sad.	48	24	12	16	0.96
I felt that people disliked me.	56	20	16	8	0.76
I could not get "going".	44	24	20	12	1.00
Total					20.00

* Significant at 0.05 level

Overall, when comparing the two groups (gang and community) there was no significant difference of experience in the frequency and appraisal scores of stress events. Remarkably, the gang and community samples reported experiencing the same frequency ($x=5.24$) while the appraisal of family stress scores were slightly higher for the gang sample (gang: $x=25.16$, community: $x=21.54$) (Table 6). The exceptions to this overall trend were

items related to divorce, physical violence, and conflict, where the community sample scored higher. At the same time, however, when comparing individual items within the area of family stress, the only significant difference found between the gang and community samples was the items related to members of the family losing their religion ($t=-2.175, p<0.038$). For this item, the gang sample reported that they were more worried or tense that individual

Table 5 (continued). Percentages, Means, and Standard Deviations on Items on the Center for Epidemiological Studies Depression Scale (CESD) by NIU Gang Members and Community Samples – Community Samples

Items	Community				x
	None	1-2 days	3-4 days	>4 days	
I was bothered by things that don't usually bother me.	28	48	16	8	0.84
I did not feel like eating; my appetite was poor.	36	36	16	12	1.12
I felt that I could not shake off the blues even with the help of my family or friends.	48	32	16	4	0.92
I felt that I was as good as other people. (R)	28	32	32	8	1.32
I had trouble keeping my mind on what I was doing.	28	32	32	8	1.08
I felt depressed.	44	24	20	12	0.96
I felt everything I did was an effort.	16	20	8	56	1.76
I felt hopeful about the future. (R)	32	36	12	20	1.24
I thought my life had been a failure.	36	32	28	4	0.68
I felt fearful.	56	32	4	8	0.92
My sleep was restless.	44	20	16	20	1.44
I was happy. (R)	52	28	20	0	1.08
I talked less than usual.	52	32	12	4	1.36
I felt lonely	60	20	16	4	0.88
People were unfriendly.	40	44	12	4	0.60
I enjoyed life. (R)	52	24	24	0	0.64
I had crying spells.	72	20	4	4	0.52
I felt sad.	32	52	4	12	0.96
I felt that people disliked me.	52	24	16	8	0.76
I could not get "going".	48	28	12	12	1.00
Total					20.00

* Significant at 0.05 level

members of their family were more worried or tense that individual members of their family appear to be losing their religion.

Relationships Between Scales

The Pearson product moment correlation matrix between the CTQ subscales, the CESD, and the HSI subscales are presented in Table 7. For the gang sample, it should be noted that due to the lack of variation

in responses on the sexual abuse subscale ($\alpha=5.0$), correlations could not be calculated for that scale. Therefore, correlations were calculated on the other individual subscales. For the gang sample, the CESD was significantly correlated with the HSI Family/Cultural Conflict Subscale (0.54), the emotional abuse (0.49), emotional neglect (0.49) and physical neglect (0.53) subscales of the CTQ. The HSI subscale was

Table 6. Hispanic Stress Inventory Family/Cultural Conflict Subscale Total Scores and Item Means and Standard Deviations by Gang and Community Samples

	<u>Gang</u>		<u>Community</u>	
	Mean	SD	Mean	SD
Stress Event Frequency Score	5.24	3.27	5.24	2.93
Stress Event Appraisal Scores	25.16	10.01	21.54	6.40
Individual Items				
I have felt that being too close to my family interfered with my own goals.	1.56	1.16	1.16	0.37
I have felt that members of my family are losing their religion.	1.72*	1.31	1.12	0.44
Members of my family have considered divorce as a solution to their marital problems.	2.20	1.41	1.80	1.12
Because of the lack of family unity, I have felt lonely and isolated.	1.24	0.83	1.40	1.00
There has been physical violence among members of my family.	1.84	1.37	1.36	.70
I have felt that family relations are becoming less important for people that I'm close to.	1.44	0.96	1.52	1.00
I had serious arguments with family members.	2.00	1.35	1.44	0.82
I have been around too much violence.	3.04	1.51	2.28	1.54
My personal goals have been in conflict with family goals.	2.84	1.80	2.10	1.52
I have noticed that religion is less important to me now than before.	1.72	1.37	1.76	1.30
There have been conflicts among members of my family.	1.68	1.25	1.72	1.37
Some members of my family have become too individualistic (self-centered).	1.96	1.27	2.20	1.32
Total	35.64	12.88	35.20	11.02

Table 7. Correlation Matrix of CESD Total Score, HIS Stress Appraisal Score and CTQ Subscale Scores for Gang and Community Samples

Community Sample	CESD Total	HIS Stress Appraisal Score	Emotional Abuse	Physical Abuse	Sexual Abuse
CESD Total	1.00	0.282	0.082	0.105	0.39
HIS Stress Appraisal Score		1.00	0.488*	0.298	0.210
Emotional Abuse			1.00	0.689**	-0.169
Physical Abuse				1.00	-0.93
Sexual Abuse					1.00

Gang Sample	CESD Total	HIS Stress Appraisal Score	Emotional Abuse	Physical Abuse	Sexual Abuse
CESD Total	1.00	0.543**	0.485**	0.079	^a
HIS Stress Appraisal Score		1.00	0.584**	0.164	^a
Emotional Abuse			1.00	0.499*	^a
Physical Abuse				1.00	^a
Sexual Abuse				0.00	^a
Emotional Neglect				0.00	^a
Physical Neglect				0.00	^a

	Community Sample		Gang Sample	
	Emotional Neglect	Physical Neglect	Emotional Neglect	Physical Neglect
CESD Total	-0.159	0.162	0.488*	0.527**
HIS Stress Appraisal Score	-0.106	0.357	0.268	0.331
Emotional Abuse	0.354	0.296	0.628**	0.394
Physical Abuse	0.292	0.098	0.528**	0.539**
Sexual Abuse	-0.047	0.355	^a	^a
Emotional Neglect	1.00	0.491	1.00	0.678**
Physical Neglect		1.00		1.00

* Significant at 0.05 level. ** Significant at 0.01 level.

^a Cannot be computed because at least one of the variables is constant.

significantly correlated with the CESD (0.54) and the emotional abuse subscale of the CTQ (0.59). For the CTQ, the emotional abuse subscale was correlated with the physical abuse (0.50) and emotional neglect (0.63) subscales. The physical abuse was correlated with both the physical neglect (0.54) and emotional neglect (0.53) subscales,

The emotional neglect was correlated with the physical neglect (0.68) subscale.

One of the major differences between two samples was that for the community sample the CESD was not significantly correlated with any of the subscales of the CTQ or the HIS. However, the community's HIS Family/Cultural Conflict Subscale

was correlated with the emotional abuse subscale of the CTQ (0.49). Among the CTQ subscales, the emotional abuse subscale was also correlated with the physical abuse (0.69) subscale. The emotional neglect subscale was significantly correlated with the physical neglect (0.50) subscale.

Transitioning to Injecting Heroin and the Psychological Indexes

One of the aims of the study is to explore the possible relationship between childhood trauma, depression, family and acculturative stress, and transitioning into injecting heroin use among non-injecting heroin users. Only the gang sample was analyzed as the data collected from this group was based on a follow up interview, allowing for transition rates to be more accurately calculated. Two variables were selected to examine the transition to injecting heroin: (1) ever injected heroin and (2) currently injecting heroin. The means of the psychological indexes for those that had transitioned to injecting were compared to non-injectors. There was no statistically significant difference on any of these measures. The psychological indexes based on scores of 16 or higher (Roberts et al. 1990). The CTQ indexes were dichotomized into "none or low" and "moderate to extreme" based on cut off scores previously established: emotional abuse 13+, physical abuse and physical neglect 10+, and emotional neglect 15+ (Bernstein and Fink 1998). For the HSI, the two groups

were split along the mean. Due to the small sample size in this analysis, several statistically non-significant trends are reported here. These relationships may eventually reach statistical significance if the sample sizes are increased.

Ever Injected Heroin

As mentioned earlier, 15 out of the 25 NIUs from the gang sample (60%) transitioned to injecting heroin. Of the fifteen that had ever injected heroin, eleven (73%) had high depression scores compared to three out of the ten (30%) who never made the transition to injecting (chi-square= 4.6, $df=1$, $p=0.03$) (see Figure 7). Physical neglect was also related to having ever injected heroin. Forty percent of those that had injected heroin had moderate to extreme scores compared to none of those that had never injected (chi-square= 5.23, $df=1$, $p=0.02$). There was also a trend for high emotional neglect to be related to injecting. Half of injectors reported high levels of emotional neglect compared to only 10% of the non-injectors (chi-square= 1.79, $df=1$, $p=0.18$).

Current Injectors

Of the current heroin users ($N=16$), ten (63%) have injected heroin and seven (44%) continue to inject. There was a trend for current injectors to have high depression scores on this scale. Six out of the seven (86%) current injectors had high levels of depression compared to six out of nine NIUs (44%) (chi-square= 2.86, $df=1$, $p=0.09$). There

was also a trend for high levels of emotional neglect to be related to current IDU. Three out of seven (42%) of the injectors reported high levels of emotional neglect compared to only one out of nine (11%) of the non-injectors (chi-square= 2.1, *df*=1, *p*=0.15).

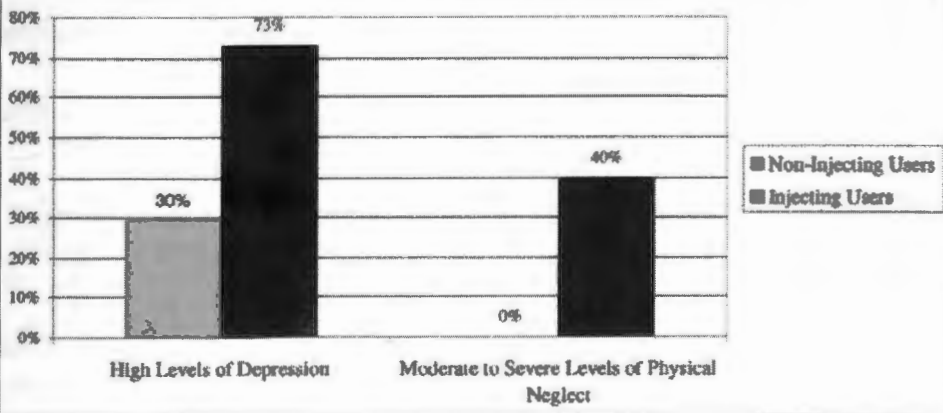
Childhood Trauma, Stress and Depression, and Substance Abuse: Logistic Model

A logistic model was used to analyze the relationship between the psychosocial characteristics and frequent heroin use. The model used the combined gang and community sample of fifty heroin users. The logistic model is the odds of being a frequent heroin user given characteristics of depression (CESD), stress (HSI), and childhood trauma (CTQ).

The dependent variable, frequent heroin use, is a dichotomous variable

formed by collapsing a continuous variable of the heroin use index into two categories around the mean. The index was created by adding the frequency of heroin use for each type of use (injecting, snorting, and shabanging). Half of the respondents reported using heroin (by any method) at least fourteen times in the last thirty days, indicating frequent heroin use. High levels of depression included scores of 16 or higher on the CESD. The high levels of stress included scores at the mean and above on the HSI. The childhood trauma consists of four subscales from the CTQ measuring physical abuse, physical neglect, emotional abuse, and emotional neglect (sexual abuse was not included due to low levels reported). Each of the subscales was collapsed into dichotomous variables contrasting "minimal" scores to other scores

Figure 7. Percent Scoring High Levels of Depression and Moderate to Severe Levels of Physical Neglect on the CTQ by Non-Injecting and Injecting Heroin Users



based on the cutoff scores suggested by Bernstein and Fink (1998). The percent falling into the scores above the "minimal" category ranged from 34-36%.

Table 8 presents the results from the logistic model. The results of the logistic regression reveal that depression and emotional neglect are positively related to frequent heroin use, while physical and emotional abuse are inversely related to frequent heroin use. Those with high levels of depression were five and a half times more likely to have more frequent heroin use than those with lower levels of depression (AOR=5.5, $p=0.04$), while those scoring above the minimum on the emotional neglect subscale were 5.8 times more likely to have more frequent heroin use (AOR= 5.8, $p=0.05$). On the other hand, those with scores higher than the minimum on the emotional (AOR=0.13, $p=0.04$) and physical abuse subscales (AOR= 0.09, $p=0.01$) had only a 13% and 9% probability of having frequent heroin use, respectively.

DISCUSSION

National data indicate that the current trend in non-injecting heroin use primarily affects adolescents and young adults. The implications of this trend among youth are vast and varied. This increase in non-injecting heroin use could lead to the need for more treatment facilities and newer and more innovative intervention models targeted at youth. Additionally, the use of non-injecting heroin increases the odds to transition to injecting drugs, and this has many public health implications that need to be examined. The transition to IDU places the user at high risk for HIV/AIDS, HBV, and HCV. This increase in NIUs who are at risk for transitioning to IDUs and are also engaging in other high-risk behaviors (i.e. sexual) may lead to an epidemic outbreak of HIV and/or HCV among IDUs at both the national and local levels. In order to prevent this from happening, transition rates of NIUs need to be more closely examined in

Table 8. Logistic Regression on Frequent Heroin Use by the Childhood Trauma Questionnaire Subscales, the Center for Epidemiological Studies Depression, and the Hispanic Stress Inventory

	B	S.E.	Wald	df	Sig	R	Adjusted Odds Ratio
Emotional Neglect	1.75	0.90	3.8	1	0.05*	0.16	5.8
Emotional Abuse	-2.03	0.99	4.3	1	0.04*	-0.18	0.13
Physical Abuse	-2.39	0.97	6.0	1	0.01**	-0.24	0.09
Physical Neglect	1.30	0.83	2.5	1	0.12	0.08	3.7
Hispanic Stress	1.18	0.84	2.0	1	0.16	0.0	3.3
Depression	1.70	0.84	4.1	1	0.04*	0.18	5.5
Constant	-0.87	0.70	1.6	1	0.21		

* Significant at 0.05 level

** Significant at 0.01 level

order to provide more effective intervention and education models to these at-risk groups.

Data from this study clearly indicate that both samples of current heroin users use multiple modes to ingest heroin. More importantly, 60% of the gang sample had transitioned to IDU since the initial NIDA interview where they reported heroin use exclusively as NIUs. While this is a very high transition rate, the high-risk drug injecting practices that these young adults engage in once they have transitioned is equally disturbing. Over half of those who have injected have shared a needle with another user and over 80% of them have shared a cooker, filter or rinse water with another user. These behaviors make these individuals much more susceptible to contracting HIV/AIDS and HCV and other blood-borne pathogens. Once infected, they may also contribute to the spread of HIV/AIDS to the more general population through unprotected sexual behavior. This suggests a need for more intervention and education in these populations of young high-risk Mexican Americans.

The results from the CTQ indicate that there was no significant difference between the gang and community groups on any of the subscales. This despite the existence of a general trend with the gang members reporting higher levels of physical abuse and emotional neglect and the community sample reporting higher levels of physical neglect and emotional abuse. There

are, however, limits to the applicability of this data because few studies have explored the relationship between substance abuse and various forms of childhood trauma other than sexual abuse.

Other forms of abuse should be examined, mainly because the various forms of abuse and neglect are not mutually exclusive. Physical abuse has been found to be related to later substance abuse (Dunn, Ryan, and Dunn 1994; Fullilove, Lown, and Fullilove 1992), and Medrano and colleagues (1999b) found that 81% of their participants experienced two or more types of childhood abuse and/or neglect using the CTQ instrument among a group of substance abusing women. While not as large a proportion, 54% of the combined sample of gang and community heroin users in this study experienced two or more types of childhood abuse/neglect. This indicates a need to examine the collective effects of the various forms of abuse and/or neglect throughout one's childhood and adolescence.

The CESD results from this study signify that both groups scored well above the cutoff score for depressive symptoms, with 54% of the total sample reporting scores 16 and above. This indicates that within this population of high-risk substance using young males, depression is widespread. Taking into account the logistic regression model used in this analysis, the CESD total score was found to be significantly related to the high-risk substance use of this population, corroborating the findings

of similar studies. The scores from the CESD in this study are much higher than those reported by college students or others of similar age in other studies (Steinhausen and Metzke 2000; Wells, Klerman, and Deykin 1987). Rather, these rates are comparable to high school students (Roberts et al., 1990), Native American adolescents (Manson et al. 1990), and Guatemalan adolescents (Berganza and Aguilar 1992). It should be noted that depression scores from the CESD are usually higher among females. However, for this particular population of substance using males, their scores were approximately equal to the scores of females in similar studies (Pumariega, Johnson, Sheridan, and Cuffe 1996; Berganza and Aguilar 1992).

Overall, the results of the HSI Family/Cultural Conflict subscale indicated that all the respondents experienced average levels of psychosocial stress when compared to a large normative sample (Cervantes et al. 1991). The results of the bivariate correlations analysis for both samples revealed that the HSI's stress appraisal score and the emotional abuse subscale of the CTQ are positively correlated with each other (gang: 0.58, community: 0.49). This indicates that for the respondent experiencing severe levels of emotional abuse, the likelihood of him also experiencing higher levels of familial stress increases as well. For the gang sample however, the bivariate correlations also revealed that the

HSI and CESD were positively correlated with each other (0.54); yet this was not found to be true for the community sample.

In the logistic regression model, the gang sample had a greater relationship between depression and high-risk substance use as well. This indicates that as various forms of abuse and neglect increase, depression also increases which, in turn, increases the likelihood for high-risk drug use. Additional studies are warranted, focusing on the cumulative effects of the various forms of childhood abuse and neglect, using instruments similar to the CTQ.

Questionnaire

The lack of statistically significant relationships between many of these indexes and transitioning to injecting may be due in part to the small sample size. A larger sample may be useful, particularly with those items in which a trend emerged. Nonetheless, two variables emerged related to injecting heroin. High depression was significantly related to having ever injected heroin and there was also a trend with current injectors. The percentage of those injecting having high depression scores is over three and half times the rates found in community samples (20%) (Radloff 1991). Clearly the role of depression in transitioning to injecting heroin use and the decision to continue to inject heroin warrants further investigation. High physical neglect was also related to having ever injected with trends for emotional neglect relating to both having ever injected and

currently injecting. Given the strong correlation between physical neglect and emotional neglect with depression, the manner in which each of these contributes to transitioning to IDU needs to be further explored.

The finding that high levels of depression are related to frequent heroin use is important for several reasons. Although the relationship between depression and substance use has been documented, very few if any studies have examined the relationship of high depression with frequency of heroin use (Darke and Ross 1997; Malow, West, Corrigan, and Pena 1992). This finding is even more relevant since over half of the sample scored high on the depression scale. The factors that are related to high depression thus need to be explored further in order to help in the intervention of frequent heroin use. It is assumed that frequent heroin use is related to addiction to heroin, of which injecting is the most popular method of use.

While there have been reports of the relationship between substance abuse and childhood trauma (Medrano et al. 1999b; Cohen and Stahler 1998), the relationship of specific childhood trauma to the frequency of heroin use has generally not been explored. The finding that emotional neglect is related to frequent heroin use is nevertheless consistent with the general findings. However, why the inverse relationship for emotional and physical abuse? Both of these variables are examined while

controlling for the effect of depression and the other subscales of the CTQ on frequency of heroin use. As little research has been conducted isolating these forms of abuse in relationship to high-risk substance use, there is no clear indication as to the reason behind this inverse relationship. It may be that physical abuse and emotional abuse, though harmful in nature, are at least a form of negative attention. Those that do not receive this negative attention and are also compounded by emotional neglect may actually have higher levels of heroin use. It may be that those high-risk youth that are neglected and do not even receive negative attention experience more psychological pain and thus use heroin and higher levels of it in order to dull these feelings.

The dichotomous form of the CESD, on the other hand, was highly significant in the relationship with substance abuse in the logistic regression model. We believe that the reason for this significance lies in the cumulative effects of childhood stress and trauma that the CESD represents. Both groups experienced relatively high levels of childhood trauma. That there are few significant differences between the groups seems to indicate that while half of the respondents are gang members, there are no significant differences in their backgrounds with regard to childhood trauma. Abuse and/or neglect appear to have little bearing on gang affiliation. Rather, if these high levels of abuse and neglect contribute to depression within this

population, they may actually have a bearing on frequency and mode of drug use.

Family and cultural stress, as measured by the HSI, did not seem to be a predictor of higher frequency or transitioning to more dangerous modes of heroin use. What this appears to mean is that problems within the family or the stress caused by acculturation does not affect drug use by these young males. Thus, in dealing with problems in the family, these males do not necessarily turn to drugs as a coping mechanism. With over half of the total respondents (54%) reporting that at least one family member uses heroin, this drug seems to be somewhat normalized within their social environments and networks. Because of this, the use of drugs in the family may not necessarily be seen as a way to handle familial problems. Instead, it may be a normal outlet already present within the family, used for reasons other than coping or dealing with problems within the family.

CONCLUSIONS

Data gathered from this study indicate that the rates of transition from non-injecting heroin use (NIU) to injecting use (IDU) among these Mexican American gang members are higher than among NIUs in other regions of the United States (Neaigus, 1998b). The emergence of an increase in non-injecting heroin and transition to IDU has important public health implications for HIV trans-

mission in San Antonio and South Texas. Similar to other studies, these data reveal that once an NIU makes the transition to IDU, they are involved in multiple risk behaviors related to HIV/AIDS and other infectious diseases such as HBV and HCV. These risk behaviors include sharing contaminated syringes and other injecting paraphernalia, and back and front loading needle practices. As important, depression was related to transition to injecting use and current injecting among the gang members and frequent heroin use between both samples. These findings strongly suggest that there is a need for allocating resources to prevent the transition to injecting drug use among Mexican Americans NIUs, and reduce risk related injecting practices that will reduce the spread of HIV.

The findings from this study also revealed that these Mexican American heroin users had relatively moderate levels of childhood trauma and stress, but high rates of depression. Overall, the childhood trauma results indicate that on the five subscales, the majority of subjects revealed that they had experienced minimal levels of abuse or neglect. Although over half of the subjects (both gang and community) experienced at least two forms of abuse, these experiences were not much different from the comparison groups that included undergraduate university students. Emotional neglect was related, however, to frequent heroin use. Additionally, moderate levels of physical and emotional

abuse were inversely related to frequent heroin use. There was also no significant difference between the results of the gang and community sample. Obviously, more research is needed in order to expand and or confirm these initial findings.

Based on these results, and those of previous studies focused on this population, families of these delinquent substance abusing males seem to have provided for many of the emotional and physical needs of their children. This is astonishing given the structural and social characteristics of these families (i.e. single-family households, drug using adults, etc.) Rather than linking delinquent behavior to dysfunctional families (and psychological characteristics), this behavior may be more associated with larger social structural deficiencies such as declining economic opportunities, joblessness and a lack of social services.

Contrary to what was expected, this young heroin using population scored average levels of psychosocial stress. Most of the items that the two groups scored high on were related to normal adolescent family conflict issues such as having serious arguments with family members. One item that may be different among these young Mexican American drug users is related to conflicts over adhering to ethnic family customs and traditions. This is consistent with other findings regarding Mexican American adolescent youth and young adults that emphasize problems associated with acculturation. While this may be an

important factor, family conflict may also be related to Mexican American gang street culture that emphasizes contemporary musical genres (rap and hip-hop), fashion (baggy clothes), and body modifications (body piercing and/or tattoos). In other words, this conflict may go beyond that associated with ethnicity and be more related to cultural factors that counter mainstream values and norms.

One of the major findings from this study is that more than half of both samples were experiencing symptoms of depression that are exceptionally high when compared to the general population. Furthermore, in comparing the gang and community sample there was no significant difference except on one item. The analysis also revealed that depression was related to substance abuse among these Mexican American heroin users. The high levels of depressive symptoms among this population adds validity to the "self-medication" hypothesis, theorizing that substance abuse is an avoidant type of coping mechanism for adolescents and young adults.

One of the more salient findings of this study is the cumulative effects of childhood abuse, depression and stress on substance abuse among this population. These data imply that as the symptoms associated with family stress increase so too does the amount of depression and subsequent drug abuse. However, we need to be cognitive that other factors may be influencing this relationship before assessing a

causal link between these variables. For instance, the influence of social context should be taken into consideration in examining the influence of these psychosocial measures on substance and other delinquent behavior. That is, among members of ghetto-based street gangs, such as these individuals, depression and stress may not be as important as they are among conventional adolescents (non-gang youth in working and middle-class neighborhoods) as predictors of substance abuse.

This is a special population, gang members and high-risk drug users from the same low-income disadvantaged neighborhoods. A population that is embedded in a street-based and ethnic culture that promotes the ideal of a strong, aggressive masculine gender role, i.e. machismo. Given these special characteristics, these males are likely to underreport incidents of childhood abuse, especially those involving sexual abuse. It should be noted that this is not exclusively an issue with Mexican American males since other studies have found that males are less likely than females to report such forms of abuse (Gill and Tutty 1997; Farber, Showers, Johnson, Joseph, and Oshins 1984; Groth and Birnbaum 1979). Furthermore, collecting data in street settings, as we did in this study, as opposed to more clinical settings, may have resulted in less direct answers to the more sensitive questions. In any case, there appears to be a strong argument for further research in this

area, principally in the issue of the development of reliable instruments to measure different forms of abuse, particularly sexual abuse among males.

There are some limitations associated with this study. A major problem is the relatively small sample that prevents us from conducting a more sophisticated analysis. The small numbers also limit the generalizability of these findings. Another problem is the deficiency associated with the items used in the childhood trauma questionnaire, particularly those measuring sexual abuse. Due to problems with the reliability of responses to questions concerning sexual abuse with this population, other measures need to be developed. This research, however, is important in that it contributes to the development of culturally relevant and class-based drug prevention and mental health intervention models targeting highly vulnerable populations such as delinquent and drug using Mexican Americans in South Texas.

FOOTNOTES

¹ In the Netherlands, NIUs of Surinamese descent were less likely to initiate injecting drug use (van Ameijden and van den Hoek 1994), and Griffiths and colleagues in the United Kingdom found that West Indian/Afro-Caribbean non-injecting drug users were less likely to be injectors (Griffiths and Gossop 1992).

² These additional 11 study subjects did not report heroin use in the

actual NIDA interview, but through qualitative fieldwork they were identified as non-injecting heroin users and were asked to participate in this follow-up study.

³ Upon contacting the potential study subject, the project was thoroughly explained to him. Each respondent was required to sign an informed consent form prior to participating in the project. For those participants under the age of 18, a parent or guardian was also required to sign the informed consent form prior to participating in the study. The instruments were administered in the field office of the Center for Drug and Social Policy Research at the University of Texas at San Antonio, the subjects' homes, or at the field site. The average time for administering the entire questionnaire was 45-60 minutes.

⁴ The instrument has been validated on a number of populations including adolescents (Bernstein, Fink and Handelsman 1994; Bernstein, et al. 1997). This can help identify individuals with a tendency to give socially desirable responses or individuals likely to produce false negative reports (Bernstein and Fink 1998).

⁵ Each item is answered on a five-point Likert scale in which 1 indicates "never true", 2 "rarely true", 3 "sometimes true", 4 "often true", and 5 "very often true". The scoring of all five of the emotional neglect items and two of the physical neglect items are reverse coded to be consistent with the

other items with higher scores indicating higher levels of neglect and abuse. The total CTQ scores range from a low of 25 to a high of 125, with individual subscales ranging from 5 to 25.

Cutting scores were previously established for indicating levels of abuse and neglect. These are divided into four levels of abuse/neglect: none (or minimal), low to moderate, moderate to severe, and severe to extreme. Cut scores varied depending on each individual clinical subscale. On the emotional abuse subscale, 5-8 indicated "none (or minimal)" abuse; 9-12 indicated "low (to moderate)"; 13-15 indicated "moderate (to severe)"; and 16 or greater was classified as "severe (to extreme)". On the emotional neglect subscale, 5-9 was classified as "none (or minimal)"; 10-14 as "low (to moderate)"; 15-17 as "moderate (to severe)"; and 18 or greater as "severe (to extreme)". The physical abuse and physical neglect subscales were scored the same, with 5-7 classified as "none (or minimal)"; 8-9 as "low (to moderate)"; 10-12 as "moderate (to severe)"; and 13 or greater as "severe (to extreme)". The sexual abuse subscale was scored as 5 indicating "none (or minimal)" abuse; 6-7 as "low (to moderate)"; 8-12 as "moderate (to severe)"; and 13 or greater as "severe (to extreme)" abuse.

⁶ A score of 16 or greater has been proposed as a criterion of depression "caseness" (Roberts et

al. 1990). This was the approximate 80th percentile in the original Community Mental Health Assessment (CMHA) study (Radloff 1991), meaning that 20% of those participating in this community study were assessed as experiencing depressive symptoms.

⁷ The appraisals range from 1 to 5, with 1 indicating "Not at all worried/tense", 2 "A little worried/tense", 3 "Moderately worried/tense", 4 "Very worried/tense", and 5 "Extremely worried/tense". Thus, two scores are obtained from this instrument, a Stress Event Frequency Score obtained from adding all the "Yes" responses to the instrument as well as a Stress Event Appraisal Score which is obtained by adding the level of stress experienced from each event as measured by the Likert Scale.

⁸ The sexual abuse scores were not included in this report because the reliability was too low ($\alpha = -0.037$). Of the 25 gang members, all scored the lowest possible score on this scale, 5. Thus there was no variation among this sample. Additionally, among the 25 community respondents, only three reported any level of sexual abuse. This problem will be addressed in the discussion section.

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A Letter to America (ISBN 9780806139449)

By David L. Boren

A powerful wake-up call to all Americans

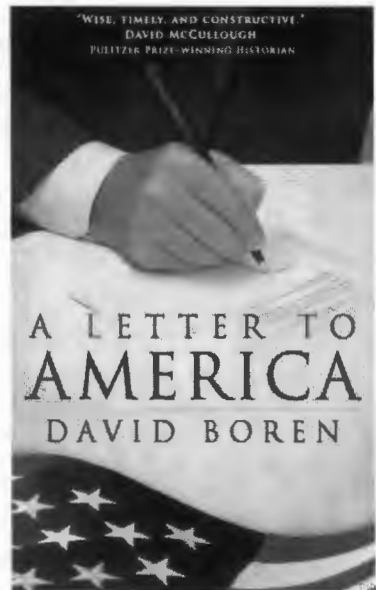
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