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THE HEALTH AND SOCIAL CONSEQUENCES OF METHAMPHETAMINE USE AMONG YOUNG ADULTS

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ABSTRACT

The current research analyzed the relationship between methamphetamine use and health and social outcomes. Interviews were conducted with a sample of 106 respondents. Virtually all of the respondents experienced negative consequences of methamphetamine use. The most serious, but least prevalent, methamphetamine-related health problems were seizures and convulsions. The most prevalent health effect was weight loss. A substantial number of respondents experienced severe psychological symptoms: depression, hallucinations, and paranoia. Of the 106 respondents, 34.9 percent had committed violence while under the influence of methamphetamine. The data suggest that methamphetamine-based violence was more likely to occur within private domestic contexts, both family and acquaintance relationships.

It is apparent from the findings that methamphetamine use heightens the risk for negative health, psychological, and social outcomes. Having said this, it is crucial to acknowledge that there was no evidence of a single, uniform career path that all chronic methamphetamine users follow. Furthermore, a significant number of sample members experienced limited or no serious social, psychological, or physical dysfunction as a result of their methamphetamine use.

The use of a variety of drugs by adolescents and young adults continues to be an important public health problem. Drug use may have important implications for the future health and well-being of many adolescents and young adults as they negotiate the transition to adulthood. Adolescents and young adults who use drugs may have especially high risks of developing mental or physical problems that interfere with educational and occupational pursuits, and which undermine long-term life chances.

Although the use of certain types of drugs has decreased recently (National Institute on Drug Abuse [NIDA] & University of Michigan 2005), there is evidence that methamphetamine use is becoming more prevalent. According to the National Survey on Drug Use and Health (Substance Abuse and Mental Health Services Administration [SAMSHA] 2005), 4.9 percent (over 12 million people) of the U.S. population reported trying methamphetamine at least once in their lifetime. The highest rate of methamphetamine use was among the 26 to 34 age group, with 6.7 percent reporting lifetime methamphetamine use during 2002. The second highest group was young adults (18-25), with 5.7 percent reporting lifetime methamphetamine use during 2002. According to the 2004 Monitoring the Future Study (NIDA & Univeristy of Michigan 2005), 6.7 percent of high school seniors reported using methamphetamine within their lifetime. Lifetime use among 8th and 10th graders was 3.5 percent and 6.1 percent, respectively. Also during 2004, 6.2 percent of high school seniors reported using methamphetamine within their lifetime. During 2002, 11.9 percent of college students and 14.8 percent of young adults (ages 19-28) reported using methamphetamine at least once during their lifetimes.

Despite these reports indicating a greater availability and consumption of methamphetamine, little is known about the association of its use and health over time, particularly during the formative stages of adolescence and young adulthood. The present research examined the inter-relationships among methamphetamine use, physical symptoms, and psychological and social well-being in a community sample of young adults living in Los Angeles.

POTENTIAL CONSEQUENCES OF METHAMPHETAMINE USE

Methamphetamine is a powerfully addictive stimulant that dramatically affects the central nervous system. The drug is made easily in clandestine laboratories with relatively inexpensive over-the-counter ingredients. These factors combine to make methamphetamine a drug with high potential for widespread abuse. The effects of methamphetamine use can include addiction, psychotic behavior, and brain damage. Methamphetamine is highly addictive and users trying to abstain from use may suffer withdrawal symptoms that include depression, anxiety, fatigue, paranoia, aggression, and intense

cravings for the drug (Katsumata, Sato, & Kashiwade 1993). Chronic methamphetamine use can cause violent behavior, anxiety, confusion, and insomnia. Users can also exhibit psychotic behavior including auditory hallucinations, mood disturbances, delusions, and paranoia, possibly resulting in homicidal or suicidal thoughts (Albertson, Walby, & Derlet 1995).

According to the Drug Abuse Warning Network (DAWN) 2002 mortality data, areas with the highest number of methamphetamine mentions in drug-related deaths were those in the Midwest and Western areas. Methamphetamine emergency department (ED) mentions have fluctuated since 1995, when there were 15,933 mentions. Methamphetamine ED mentions declined to 10,447 during 1999. This number has since increased to 17,696 in 2002.

Methamphetamine users in treatment have reported physical symptoms associated with the use of methamphetamine including weight loss, tachycardia (abnormal rapidity of heart action), tachypnea (abnormal rapidity of respiration), hyperthermia (unusually high fever), insomnia, and muscular tremors. The behavioral and psychiatric symptoms reported most often include violent behavior, repetitive activity, memory loss, paranoia, delusions of reference, auditory hallucinations, and confusion or fright. Empirical studies, however, concerning the health and social consequences of methamphetamine use are sparse.

One significant finding common to the few ethnographic studies on methamphetamine use is its relationship to violent behavior. Morgan's (1997) study of methamphetamine use in San Francisco, Honolulu and San Diego indicates a significant relationship between methamphetamine use and violence for both males and females. For example, 53 percent and 44 percent of males and females, respectively, in the Honolulu sample reported engaging in violent acts due to methamphetamine use. Furthermore, a majority of respondents across all sites reported experiencing major psychological problems. Overall, 58 percent of the males and 52 percent of the females reported paranoia due to their methamphetamine use.

Similarly, an ethnographic study in Arizona (Castro 1997) suggests that methamphetamine users burn out even faster and often develop higher levels of paranoia than they experience with cocaine. Recently Perdue and colleagues (2003) studied the associations between being high on methamphetamine and engaging in risky sexual practices. Their findings indicate that individuals high on methamphetamine were significantly more likely to have unprotected sex and to have multiple sex partners than their counterparts not high on methamphetamine.

RESEARCH METHODS

The current research analyzed the health and social consequences of methamphetamine use among a sample of young adults. Interviews were conducted with a targeted sample of 106 respondents. This section outlines sampling and data collection procedures, as well as measures of variables used in the analysis.

The Sample

Location and Recruitment Methods

The research was based primarily on in depth, life-history interviews with 106 individuals who used methamphetamine for a minimum of three months and who resided in Los Angeles County. The respondents were recruited from two social settings: 1) methamphetamine users participating in ADAPT, a drug treatment program for methamphetamine users and 2) methamphetamine users at liberty in the community and having little or no contact with treatment or criminal justice institutions.

The data collection process began with the recruitment of a sample of methamphetamine users from a drug treatment program. Arrangements for respondent recruitment were made with the ADAPT program, a drug treatment program for methamphetamine users in Los Angeles County. Meetings were held between the senior research staff and the treatment program Director and program participants. The research study was explained in detail and contact letters were left with the program participants. Potential respondents were instructed to call for appointments, at which time they were screened for eligibility (i.e., used methamphetamine for at least 3 months, age 18-26) and arrangements were made for the interview. Once the initial pool of respondents were identified, they were asked to nominate or refer "someone like them" who also has been involved in methamphetamine use. Thus, the initial sample was comprised of treatment pro-

Table 1: Sample Characteristics (N=106)

Sex (%)		
Male	59.40	
Female	40.60	
Age (mean)	21.58	
(median)	22.00	
Race (%)		
white	30.20	
black	7.50	
hispanic	62.30	
Education (mean years completed)	11.88	
School dropout (%)	17.00	
Marital status at interview (%)		
married/living together	26.40	
never married	69.80	
other	3.80	
Children		
have children (%)	34.00	
number (mean)	2.10	
Employment history (%)		
never worked	17.00	
sales/cashier/foodworker	24.50	
clerical	9.40	
non-skilled	21.70	
skilled	10.40	
semi professional/professional	17.00	
Problems while in school	Prevalence (%)	Age at initiation (mean)
fighting	72.60	11.64
weapons possession	27.40	13.34
alcohol use	45.30	13.69
drug use	78.40	13.86
Intact Family (%)	82.10	
Family problems (%)		
someone arrested	48.10	
substance abuse	53.70	
family mental health	11.30	
famiy violence while using drugs/alcohol	26.40	

gram participants and "chain referrals" from these treatment respondents.

A broader community sample was recruited through advertising in local university (California State University, Los Angeles, University of Southern California) newspapers. This tactic helped expand our sample to unknown members of the population who have no contact with formal treatment or criminal justice institutions. Chain referral or "snowball" sampling techniques also was used with this sample.

The sample contains 55 respondents (51.9%) in drug treatment and 51 (48.1%) active community methamphetamine users. The majority of respondents were male (59.4%), Hispanic (62.3%), high school graduates (83.0%), in their twenties (86.2%), possessing, on average, 25 months of work experience (see Table 1). The youngest respondent was 18 years old and the oldest 25; the median age was 22 years.

Most of the respondents worked in a legitimate job (83%). Approximately three in five respondents (66%) worked in unskilled and semi-skilled occupations (e.g., clerical, sales and factory jobs). However, approximately 20% of the sample worked in semi-professional and professional jobs (e.g., counselor, teacher, accountant).

Table 2 shows self-reported lifetime prevalence of drug use, drug selling, and non-violent and violent crimes. Respondents reported that they were engaged in a wide range of criminal and deviant activities. Nearly all said they were experienced drug users.

Table 2: Crime, Drug Use and Drug Selling History (N=106)

	Prevalence (%)	Age at Initiation
Non-Violent Crimes		
Auto theft	42.5	14.36
Shoplifting	68.9	12.62
Forgery	8.5	19.67
Prostitution	0.9	19.00
Burglary	13.2	15.79
Violent Crimes		
Assault	36.7	15.71
Robbery	16.0	15.59
Weapons possession	54.3	15.34
Attempted murder	16.0	16.18
Murder	6.6	15.86
Drug Used		
Alcohol	100.0	13.59
Marijuana	96.2	13.95
Inhalants	28.3	14.87
Hallucinogens	55.2	15.74
PCP	29.3	15.77
Methamphetamine	100.0	16.80
Depressants	17.9	16.05
Cocaine	76.2	16.92
Crack	50.9	16.95
Heroin	2.8	20.00
Drug Sold		
Methamphetamine	60.9	
Cocaine	16.9	
Crack	14.6	
Marijuana	32.0	

This is not surprising since the criterion for inclusion in this study was methamphetamine use. Seventy-six percent used cocaine, 51 percent used crack, 5 percent used hallucinogens, and 96 percent used marijuana. Of the 106 people interviewed, 67.9 percent (N=72) had committed at least one violent crime. Sixteen percent reported involvement in robbery, 16 percent reported involvement in attempted murder, 6 percent in murder, 37 percent had committed assault, and 54 percent had carried weapons. However, only twenty-three percent (N=24) of the sample were ever arrested for a violent crime. Eighty-three percent (N=88) of the respondents were involved in nonviolent crime.

Table 2 also shows lifetime participation rates in drug selling by drug type. Sixty-one percent had sold methamphetamine. Thirty-two percent of the respondents had sold marijuana and 15 percent and 17 percent sold crack and cocaine, respectively. The mean age of initiation into dealing was before 17 years of age.

Interview Protocol

The primary goal of this research was to capture thick descriptions of the relationship between methamphetamine use, health, and high-risk behaviors. Depth interviewing was used to record information about specific events and allowed respondents to reflect on those events. Structured, but open-ended interview guides were used. The open-ended technique created a context in which respondents were able to speak freely and in their own words. Furthermore, it facilitated the pursuit of issues that were raised by the respondents during the interview but are not recognized beforehand by the researchers.

The interviews included items on personal demographics, family background, detailed life history information about prior involvement in drug use, questions about lifestyle, health and psychological problems, and items on violence toward others. Participants who reported health, psychological, and social problems were asked to provide a description of the problem event/act (the

Table 3: Characteristics of Methamphetamine Use

	N	Percent
Frequency of Use		
Weekends	20	18.9
3-6 days/week	13	12.2
Daily	73	68.9
Weekly Cost		
Range	$0-800	
Mean	$136	
Median	$60	
Prmiary Method of Use		
Snort	82	77.4
Smoke	20	18.9
Inject	4	3.7
Binge		
Never	3	2.8
2-5 days	78	73.5
6-10 days	25	23.7
range	2-21 days	
mean	4.18 days	
median	3.00 days	

most recent one for multiple episodes) and its consequences. A narrative account of how these drugs and drug states were related to the event also were obtained.

Sample members were asked if they had experienced any of 13 drug-related problems while using methamphetamine. The 13 problems covered a wide range of intrapsychic, personal and interpersonal difficulties. Factor analysis with varimax rotation and a Kaiser criterion was used to create indices of drug problems. For example, intrapsychic problems related to methamphetamine use included depression, paranoia, hallucinations, anxiety/irritability, and sleeplessness. A second factor involved difficulties in social functioning and in fulfilling role obligations, including trouble at school, trouble at work, family problems, and financial problems.

In addition, respondents were asked to describe the relationship, if any, between the problems and methamphetamine use, including amounts of specific substances ingested prior to the time of the incident by the respondent, the state of intoxication or other drug states (e.g., 'crashing') manifested by the respondent prior to the reported behavior.

Interview Procedures

Interviews were conducted in a neutral location such as a library, park, or a private office in a university. In order to convey the neutrality and anonymity of the study, we avoided offices of either criminal justice agencies or clinical settings. The participants were given a travel allowance ($5), regardless of the length or duration of their trip. A stipend of $25 for the interview was paid at the conclusion of the interview, although it was not contingent on completion of the interview.

Getting Into Methamphetamine

Although no one process of initiation was uniformly experienced by all our sample members, some themes were common to most accounts. First, the vast majority of the respondents were seasoned drug users, first alcohol and marijuana and later cocaine. "Getting high" was part of their life experiences, so it was not a giant step for them to indulge their curiosity about a new high. Second, a high percentage of individuals sought out methamphetamine on their own the first time. Although initiation was often self-motivated, it nearly always was part of some social situation with friends and/or acquaintances. It was a rare case in which one's first use of methamphetamine was occasioned by a stranger. Typically, methamphetamine was first tried at the respondent's or friend's house; a safe, private, comfortable location.

An overwhelming number of respondents increased their use of methamphetamine within days of their initial experience. This pattern of rapid escalation not only can be attributed to the physical and psychological effects of the drug but also with the general availability of methamphetamine.

A key factor often cited as contributing to escalating use was the seductive nature of the drug itself. The word often used to describe methamphetamine by the respondents was "seductive." Most stated that methamphetamine effects offered not only increased energy, but a sense of well-being and a feeling of mastery and power that was so reinforcing it often led them to use more frequently than they expected. Casual weekend use often led to greater use during the week. Even those who initially limited their use to specific situations—parties, sexual activities, work—gradually found themselves using methamphetamine in a variety of activities. People who went on periodic binges sometimes found their binges stretching over longer periods at higher dosages. All

this helps to explain why many users escalated their use over time. It is important to note, however, that such escalation was not inevitable; approximately 20 percent of the respondents maintained stable use patterns over many years without increasing doses (Table 3).

The binge is the continuation of the methamphetamine high. The user maintains the high by using more methamphetamine. After each use of the drug, a smaller euphoric rush than the initial rush is experienced until, finally, there is no rush and no high. During the binge, the user becomes hyperactive both mentally and physically. Matt, a 25 year old construction worker described a typical binge episode:

> I would go on meth spree for about a week and couldn't control my usage. It was like I had to constantly have to be snorting or smoking the meth. In my mind it tells me to do some more to function a lot better and faster. I believe that meth is one of the most psychologically addictive drugs around. Whenever I get tired or wish I had more energy, I always think how nice it would be to have some speed. In that respect, I am addicted because it is definitely a part of my thought pattern. Meth is very seductive. It makes you feel energized and powerful. Once you take it a few times, you will continue to think about it after you stop.

Many users emphasized its energizing effects, some its euphoria, and others its sexual effects. Unlike alcohol, marijuana, and hallucinogens, methamphetamine did not diminish a person's basic competence in daily life-functions unless and until it was used in excess. The sample members spoke of methamphetamine as a general pick-me-up in a variety of circumstances: cleaning one's house, studying, keeping up with the kids, enhancing a marijuana high, etc. The repsondents reported at least seven uses for methamphetamine.

-To party in varying public and private settings
-To enhance sex
-To work
-To diet
-To get high
-To sustain themselves for laborious tasks, such as studying, writing, child care, long car trips
-To socialize with friends

Many of the sample members felt energized by methamphetamine and reported a heightened sense of accomplishment while using the drug. Joe, a 25 year old mechanic:

> Methamphetamine kept me awake for a long time. It allowed me to do things when I didn't want to. Like other drugs would relax me, give me a weird feeling, make me lazy or sleep a lot. Meth gave me a feeling like my body was constantly charged no matter what I did for a long period of time.

Val, a 30 year old employment agency supervisor:

> Methamphetamine made me fell like I was finally capable of doing a lot of things all in one day. Especially since I have to deal with a lot of people and paperwork.

Terri, a 31 year old child care supervisor:

> It keeps me going. Lets me feel like I'm always energized. It allows me to finish all my chores after coming home from work and able to play with my kids at all times.

For Jill, a 20 year old sales clerk, methamphetamine use was simply a method to loose weight. Within three months, she was using $100 a day.

> Meth made me loose my appetite. I felt I could quit as soon as I got down to the weight that I was satisfied with. But then I couldn't stop. I had to have it daily.

Still for others, methamphetamine use was a way to achieve a satisfying high. Martha, a 23 year old office worker:

> At first, I liked the way methamphetamine tasted with marijuana. Then I began smoking meth by itself, with my boyfriend and I liked the way it got me energized daily. I liked the way it energized during sex. Also, I was able to do plenty of errands.

Bob, a 29 year old architect:

> I smoke cocaine but I stopped liking it. So I went to meth in order to get a good high. I

Table 4: Methamphetamine-Related Problems (N=106)

Health Problems	**Percent**
Seizures/convulsions	3.8
Dehydration	8.5
Sleep	93.4
Weight	55.7
Depression	36.8
Paranoia	62.3
Hallucinations	37.7
Irritability	79.3
Social Problems	
Family	49.1
School	15.1
Work	7.6
Financial	23.6
Psychological Problem Index (Sleep, depression, paranoia, hallucinations, irritability)	
# of Problems	
1	11.8
2	19.4
3	23.7
4	24.7
5	20.4
Social Problem Index (Family, school, work, financial)	
# of Problems	
0	19.4
1	31.2
2	35.5
3	9.7
4	4.3

> liked it because a small amount would get me high. What caught me about meth is the feeling of invulnerability. I got from meth what most cocaine users get from coke. The feeling of being on top of the world.

Consequences of Methamphetamine Use

Perhaps the most important theme in their description of the methamphetamine high was the "intensity" of the euphoria. The positive characteristics of methamphetamine use —the euphoria, energy, empowerment—, however, were often overshadowed by the negative effects of long-term use. Sample members were asked to report on side effects during their heaviest period of methamphetamine use. Respondents varied in their length of use (the average length of use was 3.8 years). Ninety-seven percent of the sample reported that they engaged in binge behavior. Approximately four days was the average reported binge duration. In light of this level of use, it is not surprising that the respondents reported a wide range of side effects from methamphetamine use. Their experiences are summarized in Table 4.

Virtually all the repsondents experienced negative consequences of methamphetamine use. The most serious, but least prevalent, methamphetamine-related health problem was seizures and convulsions. Four respondents reported that they had suffered from some form of convulsion or seizure as a consequence of methamphetamine use. Nine respondents reported fairly serious episodes of dehydration. The most prevalent health effect was weight loss. Fifty-six percent of the respondents reported weight loss.

With long-term use the psychological effects of methamphetamine can be severe. Psychological symptoms specific to methamphetamine can include suspicion, anxiety and hallucinations. Much more acute symptoms can be changes in lifestyle and eventually in personality. Insomnia was the most frequent mental health problem reported by the sample members. This finding is not surprising since methamphetamine is a central nervous system stimulant that is valued precisely for its energizing effects. Irritability was reported by 70 percent of the sample. Irritability was described as feeling "moody," having a "short fuse," and being argumentative.

A substantial number of respondents experienced severe psychological symptoms: depression, hallucinations, and paranoia. The most frequently mentioned form of paranoia was fear of others; feeling that people wished harm to or threatened the respondent. This type of psychotic symptom has particular relevance to violent behavior. Previous research suggests that when a person fears personal harm or feels threatened by others, interpersonal violence becomes more likely (Link & Stueve 1998). In addition, violence is more likely when internal controls that might otherwise block the expression of violence break down.

Approximately 38 percent of the respondents reported experiencing some form of hallucination. Hallucinations usually took the form of hearing voices familiar to the respondent that make insulting remarks or command the respondent to do certain things. Depressed users often had hallucinations with themes of guilt and personal

Table 5: Mean Scores of Males and Females on Frequency of Methamphetamine Use and Drug Problem Indices

	Psychological Problem Index		Social Problem Index	
Frequency of Use	**Male**	**Female**	**Male**	**Female**
Weekends	2.00	2.50	0.93	0.00
3-6 days / week	2.96	3.80	1.00	1.00
Daily	3.29	3.90	1.91	1.52

inadequacy, such a hearing voices berating them for their shortcomings.

Despite the high level of addiction among sample members, the social effects of methamphetamine use were surprising small. Nineteen percent of the sample reported no social effects and approximately 31 percent reported experiencing only one social problem related to methamphetamine use. Methamphetamine use seemed to have the least impact on school, work and finances. Methamphetamine-related problems with spouses, lovers, or friends were more apparent. One in two respondents reported that methamphetamine use had negative effects on their interpersonal relationships.

Overall, the sample members that reported the greatest number of psychological and social problems are the respondents that reported the greatest methamphetamine use (see Table 5). Regardless of sex, the mean scores for psychological and social problems increase as the level of methamphetamine use increases.

While the psychological effects of methamphetamine use are quite similar to those of crack cocaine, the social consequences seem to be quite different. Regardless of how crack use was initiated, the vast majority of crack users ended up in the same role—as street addicts. The crack user became increasingly immersed in their addiction at the exclusion of almost all else. Economic problems and the culture of addiction justified the use of virtually any means to get money in order to support crack habits. For many, the problem of maintaining an addiction took precedence over all other interests and over participation in other social worlds. Crack users often became enmeshed in deviance and further alienated, both socially and psychologically, from conventional life.

Prevalence of Methamphetamine-related Violence

Of the 106 respondents, 37 (34.9%) had committed violence while under the influence of methamphetamine. Males comprised two-thirds of the 37 respondents (N=24). Of the total sample, 38 percent of males and 30 percent of females committed methamphetamine-related violence, respectively. Seventeen of the 37 respondents who committed methamphetamine-related violence (45.9%) reported that they had never committed a violent crime prior to the methamphetamine-based events. However, 12 (70.5%) of these respondents had committed aggressive acts while under the influence of other drugs. Overall, the 37 respondents reported 54 separate violent events while using methamphetamine. Of these 54 events, 33 (61.1%) acts of violence involved domestic relationships, 9 (16.7%) of the violent events were drug related, 7 (13%) were gang related, and 5 (9.3%) involved random acts of violence (e.g., road rage, stranger assault).

It has been suggested that in contrast to crack, methamphetamine produces a longer lasting high. As a result, methamphetamine users are able to remain away from the market environment longer as they are not constantly "chasing the pipe". Consequently, methamphetamine users are more likely to return to work, school, or home settings while high. Thus, in contrast to their crack using counterparts, they are less likely to be entrenched in street networks yet more likely to engage in violent behavior at home, in the workplace, or within other more mainstream social settings. Study data suggest that methamphetamine-based violence may indeed be more likely to occur within private domestic contexts, both family and acquaintance relationships. Thirty-eight (70.4%) of the 54 violent events occurred in private homes, seven (14.3%) at parties, one (1.9%) at work, and eight (14,8%) in public settings (e.g., parks, street, roadways).

The Social Context of Methamphetamine-Related Violence

Methamphetamine affects were evident in decision making, cognition, intensified emo-

tional states, exaggerated affect, and diminished capacity for self-regulation. For example, respondents indicated that language when intoxicated was more provocative, and language often "amped up" otherwise minor disputes into violent encounters.

Phillip, a 30 year old restaurant worker, used methamphetamine for two years.

> I was tired and exhausted from working, so I went out with a few co-workers for some drinks. I did a few lines of meth and had a few beers. I got home late. I got undressed and my wife asked me where I was and don't you know how to call. I told her to shut up and I will do as I please. We began arguing back and forth and she called me a drunk and druggie. I lost control. I slapped her and kicked her in the stomach. I threw her down, then I left the room.

Methamphetamine use often increased the stakes in everyday interactions, transforming them from non-challenging verbal interactions into the types of "character contests" whose resolution often involved violence. Methamphetamine exaggerated the sense of outrage over perceived transgressions of personal codes (respect, space, verbal challenges), resulting in violence to exert social control or retribution.

In the following account, the social identity of Larry, a 21 year old real estate assistant, was challenged by his girlfriend.

> Me and my girlfriend were coming home from the doctor's from getting her pregnancy test. We were talking about how she was pregnant and how she needed to stay focused in school and with her health. Then she said and "your ass better be able to be a responsible father and keep your ass out of trouble." I simply slapped her in her face. I couldn't deal with the insult.

Some people simply made bad decisions while high, leading to fights that might have been avoided in other circumstances. Martha, a 23 year old student:

> I was inside my room, getting ready to take a shower. I was making plans for the evening, when my sister said that "I couldn't leave. Mom said you can't go anywhere." My mom walked in and said "where do you think you're going?" I said out with some friends. My mom said "you're not going out until you run some errands for me. You haven't done anything, so you will do this for me." I just snapped and called my mom a fuckin' asshole and pushed her into my dresser. I never did anything like this before. I hadn't slept for a couple of days, doing meth continuously.

A fairly common effect of methamphetamine was paranoia. Paranoia contributed to hostile attributions that created an air of danger and threat, leading to defensive or pre-emptive violence. Veronica, a 20 year old receptionist, high on three lines of methamphetamine and three beers was relaxing outside her house:

> I was relaxing at home when a girl passed by. I thought she gave me a dirty look. She continued looking at me as she passed by. I can't stand it when individuals give me dirty looks when I don't know them. I shouted what are you looking at you dumb bitch and socked her in her face. I pushed her around and she went running away.

Similarly, Bernard, a 28 year old lab technician, imagined that people were evil.

> I was on vacation in Rosarito, Mexico. I began doing meth on Friday night and now it was Sunday afternoon. I also drank a few beers. I was paranoid the whole day. I thought others were up to something. I was watching everybody, thinking and looking to see if anyone was doing something bad. I had evil thoughts. I was thinking evil and thought others were doing something wrong. So I got bottles and started breaking them over people's heads.

Several sample members reported that their decision making within violent events was comprised. Perhaps the most common language respondents used to describe their behavior was "loss of control." The respondents spoke in terms of "being out of control," "blowing up," or having an "outburst of rage." Alicia, a 24 year old clerical assistant, used methamphetamine for four years. She described a minor dispute with her boyfriend that erupted into violence. Both had snorted methamphetamine for two hours.

> Me and boyfriend were having some finan-

> cial problems and we were discussing the money I spent. We were talking about the money that I spent on clothes on a weekly basis. My boyfriend said it was unnecessary. I yelled at him and he got upset and pushed me. Then I punched him and he hit me and threw me to the ground. We continued to fight for a few minutes.

While cognitive impairment was evident for many, others noted that their decisions to use violence reflected the normative process of gang conflicts. Gangs provide a social context in which the potential for violence results from any number of concerns including: territorial battles, initiation and detachment rituals, attaining status and social identity, material gain, expressions of grievances, retribution, reinforcement of collective identity, etc.

For Javier, a 26 year old mechanic, drug use and violence was part of the normative gang process:

> Me and my homeboys were kicking back at a park doing some methamphetamine, smoking weed, and drinking beer. We were all shit-faced and bullshiting. And then we decided to go on a drive-by that night. We were talking about a homeboy that had just recently passed away and how we should go and get those guys back. We went to our houses, got our weapons and cars, then met up at the park. We had about three to four full car loads... We shot at about 10 guys and hit a couple.

In this case, aggression was perceived as a form of retaliation for a previous wrongdoing. By retaliating, the gang members "saved face" were able to nullify the image of being weak and ineffectual.

The relationship between drug use and violence has been observed in literally hundreds of empirical studies. People who use and sell drugs are more likely to engage in violence than non-drug involved individuals. Accordingly, although individuals generally have low base rates of violence (Sommers & Baskin 1992), their entry into drug use or selling increases the risks of violence.

In some cases, interpersonal violence occurred within the system of drug use. Frank, a 25 year old cook, talked about one incident:

> I was relaxing at my house with a few friends. We were drinking some beer and doing a few lines of meth. I was chopping up some lines for me and my friends. We were just getting ready to do the lines when my friend noticed that mine was the biggest of all. He got upset because they got little lines and I got a fatter one. He said that it wasn't fair. We argued and then started punching and fighting. Things got out of control.

Joey, a 12th grade student, described a similar conflict over methamphetamine use.

> It was during lunch at school. I was relaxing with my girlfriend and friends at the table. We were talking and I wanted to do some more meth. I was asking my friend to kick me down with a little bit of his stuff and I would get him back when I got my sack. My friend refused to give me any. I got upset and began to lose my patience. I told him he should give me some. He said, "no and what are you going to do if I don't." I said, "I will kick your ass." He said, "well then come on." So I punched him first and we began fighting.

Finally, in only two cases, violence was used as means to obtain money for methamphetamine. Mario, a 25 year old sales clerk, described such an incident:

> I was on my way to a friends house, walking down the street, when I noticed some guy that looked like he had money. I was thinking about how I could but more meth. So I decided to steal this guy's wallet. I put a gun to his to face and told him to give me everything or else I would shoot him.

Allen, a 26 year old furniture mover, had similar motivations:

> I was coming down from meth and had no money. Had no sleep, no meth, I needed more. So I went to a local drug spot with two friends. I pretended I was going to buy some meth. After discussing the price, the dealer gave me the drugs and then I pulled out my 9mm. I hit him with it in the face and jumped in my friends car.

The above accounts indicate that methamphetamine use provided several mecha-

nisms for motivating violence. Cognitive effects included: inhibition of cues that normally control behavior, increased arousability, interference with communication and interpersonal interactions, and intensification of emotions. The findings suggest that a methamphetamine-related violent event results from the interaction of the individual, the substance, and the situation.

In the present study, methamphetamine was more often present in violent events that occurred in peoples' homes and between known individuals. Similar to previous research on assaultive behavior, the picture that emerges from these analyses is not one of blind irrational behavior. Rather, the rational character of these events is evidenced in a person's image maintenance in the face of challenge. It is clear from the accounts that interactions between victim and offender played a fundamental role in violent incidents. To a large extent, these sample members were not roaming willy-nilly through the streets engaging in "unprovoked" violence.

CONCLUSIONS

Study findings suggest that methamphetamine use has serious negative consequences for health and psychological functioning. It is also apparent from our findings that methamphetamine use heightens the risk for violence. Everyone we interviewed agreed that methamphetamine has clear abuse and violence potential. Almost all of our respondents knew people who had gone "too far" with methamphetamine even if they themselves had not. Having said this, it is crucial to reiterate that we could find no evidence of a single, uniform career path that all chronic methamphetamine users follow. Progression from controlled use to addiction is not inexorable. Furthermore, a significant number of sample members experienced limited or no serious social, psychological, or physical dysfunction as a result of their methamphetamine use. Most germane to this study, we found that violence is not an inevitable outcome of even chronic methamphetamine use.

Our findings suggest clearly that pharmacology is not destiny. As Fagan (1993) and Zinberg (1984) have shown, the interaction between the pharmacological properties of a substance and the physiological characteristics of a user accounts for only part of a drug's effects. Drug effects and outcomes are mediated by users' norms, values, practices, and circumstances. No matter how seductive methamphetamine is, it is always used in social contexts that shape how it is used and what its effects are taken to mean by users.

The variation in intoxicated behaviors within social contexts suggests that the context itself exerts a powerful influence on the violence outcomes of methamphetamine situations. This study has shown that the importance of social context for methamphetamine-related violence lies in the mediating processes that shape behaviors as well as in the specific interactions leading to violence between offenders and victims. Violent behavior resulted from a complex interaction among a variety of social, personality, environmental, and clinical factors whose relative importance varied across situations and time.

Furthermore, research on intoxication often has overlooked the distinction between acute and chronic intoxication and their differential effects on affective or personality states. The most significant pharmacologic determinants of the methamphetamine-violence link are the dose and the chronicity of exposure to the drug. At acute low doses, methamphetamine produced cognitive and mood alterations but tended not to increase offensive-aggressive behavior. With increasing dose and long-term use, methamphetamine users tended to display psychological and physical deterioration, as well as changes in their social behavior. Correspondingly, chronic use tended to reduce impulse control and produce exaggerated defensive postures that deviated from a respondent's expected behavioral repertoire. It is important to note that sample members also reported that high acute methamphetamine doses and binging often induced paranoia that was directly linked to aggressive and violent behavior.

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REDUCING WOMEN'S RISK OF HETEROSEXUAL TRANSMISSION OF HIV IN THE U.S.

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> Assuming no major scientific breakthrough in tools that protect against the sexual transmission of HIV in the near future, to prevent HIV infection among women in the United States, it will be necessary not only to promote changes that support the active role of women in prevention but also to promote change in the attitudes and behaviors of men. (Amaro 1995 445)

Well into the third decade of the AIDS pandemic, it has become clear that stemming heterosexual transmission of HIV, the virus that causes AIDS, will require innovative ways of thinking about the myriad factors that influence sexual behavior. We focus on the growing HIV/AIDS epidemic among heterosexual women in the U.S. Building on prior work in this area, we begin at the point where many considerations of this topic end: the need to shift the focus of prevention efforts from women to their male partners. This shift does not reflect a belief that women are passive participants in sexual encounters, but rather the recognition that many women who become infected with HIV do not engage in any "risk behaviors" other than unprotected sexual intercourse with a primary partner. Thus, interventions must focus not only on women's sexual behavior but also on reducing the male partner's risk of HIV exposure and fostering sexual behavior change at the level of the couple. We consider the implications of moving from prevention strategies that make women the "gate-keepers" of sexual risk reduction efforts to approaches that take into account the gendered and interactive nature of sexuality. We first describe current and future dimensions of the HIV/AIDS epidemic in the U.S. Following this, we review prevention efforts aimed at sexual risk reduction among heterosexual women. We then discuss programs that focus on heterosexual men. Finally, we consider future challenges for the prevention of HIV/AIDS among heterosexual women.[1]

PAST, CURRENT, AND FUTURE DIMENSIONS OF THE HIV/AIDS EPIDEMIC IN THE U.S.

> The acquired immunodeficiency syndrome (AIDS) is devastating the lives of millions of women, while many millions more are at risk for infection at this time. Women who engage in heterosexual intercourse are the group most rapidly becoming infected with human immunodeficiency virus (HIV) in the United States. (O'Leary & Jemmott 1995 ix)

Since the beginning of the HIV/AIDS epidemic, there have been 886,575 AIDS diagnoses and half a million deaths due to AIDS in the U.S. (CDC 2002). Despite treatment advances that contribute to increased survival among those infected with HIV and reduce the risk of maternal-child transmission of the virus, HIV/AIDS represents a continued threat to the health of the nation. This is reflected in the fact that in 2001, AIDS was the 6th leading cause of death among both male and female 15-to-44-year-olds in the United States (CDC 2004).

From its initial emergence, AIDS has been unequally distributed among different segments of the U.S. population. According to statistics compiled by the Centers for Disease Control, the majority of the 384,906 people living with AIDS at the end of 2002 were adolescents or adults, with 43 percent of cases occurring in the 35-44 age group and 30 percent in the 45-54 age group (CDC 2002; unless otherwise noted all statistics in this and the next paragraph are from this report). In terms of gender, over three quarters (78.3%) of adolescents and adults living with AIDS are male; 21.7 percent are female. The majority of AIDS cases among men are attributed to male-male sexual contact (58%), injecting drug use (23%), or both (8%); just 10 percent of AIDS cases among men are attributed to heterosexual exposure, and 2 percent to other or unknown risks. Among women, the majority of AIDS cases are attributed to heterosexual exposure (61%); 36 percent are attributed to injecting drug use and 3 percent to other or unknown risks. Members of ethnic minority groups are over-represented in AIDS statistics: in 2002, estimated rates of AIDS were highest among African American men (108.4 per 100,000) and women (48.6), followed by Hispanic men (39.7) and women (11.3), American Indian/Alaska Native men (16.9) and women

(5.8), White men (12.3) and women (2.1) and Asian/Pacific Islander men (8.6) and women (1.5).

Because of the long incubation period, reporting delays, and changes in the case definition for AIDS introduced in 1993, these statistics do not accurately represent the future of the epidemic, particularly as it relates to gender. AIDS diagnoses have increased among women each year between 1998 and 2002, from 23.8 percent to 26 percent of all cases, with a corresponding decrease among men. Foreshadowing the probable future of the epidemic, surveillance of new HIV infections among 13-24 year olds indicates that almost half (47%) are occurring among young women (CDC 2003a). The changing gender dynamics of the HIV/AIDS epidemic are linked to a shift in exposure categories over time. Early on, the epidemic was concentrated among gay and bisexual men and their partners; however, as HIV spread into the general population, this pattern changed. The incidence of exposure through heterosexual contact increased between 1998 and 2002: from 12.3 percent to 15.9 percent of AIDS cases among men and from 61.3 percent to 68.2 percent of AIDS cases among women. Given these trends, the HIV/AIDS epidemic in the U.S. is likely to increasingly resemble the pattern observed in much of the rest of the world, where women account for approximately half of the HIV/AIDS cases and heterosexual contact is the primary mode of transmission. This changing reality will pose a formidable challenge to public health efforts and require that HIV/AIDS prevention efforts be refined and redirected.

PREVENTING HETEROSEXUAL TRANSMISSION OF HIV/AIDS AMONG WOMEN: APPROACHES AND CHALLENGES

> Evidence is clear that it is more difficult for women to achieve condom use in an ongoing stable relationship. Unfortunately, many (probably most) women who have become infected globally have been infected by a primary partner. (O'Leary & Wingood 2000 195-196)

Within the last 100 years, medical science has allowed humans to eradicate most infectious diseases that caused the majority of deaths throughout history, either through the development of vaccines or the discovery of effective cures. This has not been the case for HIV/AIDS. Although highly active antiretroviral therapy (HAART) represents a significant treatment advance, an effective vaccine against HIV has not yet been developed (UNFPA 2001) and a cure for AIDS remains elusive. As a result, prevention remains the focus of HIV/AIDS intervention efforts (Auerbach & Coates 2000; DiClemente 2000).

Physical barriers remain the primary method for preventing the spread of HIV during heterosexual intercourse. To date, promoting the use of male condoms has been at the core of most HIV prevention efforts (UNAIDS 2001). Because use of the male condom requires the partner's cooperation – which may be difficult to enlist – there is a long-recognized need for female-controlled prevention methods (Gollub 1995; Gupta & Weiss 1995; Stein 1990). The female condom was introduced in the early 1990s and represents an alternative to the male condom. However, although research studies suggest that women are willing to try them (e.g., Hoffman, Exner, Leu, Ehrhardt, & Stein 2003), female condoms are not widely used due in part to their high cost, difficulty of insertion experienced by some women, and visibility to the male partner (Logan, Cole, & Leukefeld 2002; O'Leary & Wingood 2000). Moreover, condom use is not a viable long-term strategy for a woman who wants to become pregnant. Thus, development of an unobtrusive, inexpensive, female-controlled barrier — most likely in the form of a vaginal microbicide that would prevent transmission of HIV while permitting conception to occur — remains a high priority. According to the National Institute of Allergy and Infectious Diseases (2004), several topical microbicides are currently being tested in clinical trials to evaluate acceptability, safety, and effectiveness.

In the absence of new prevention technologies, individuals can reduce their risk of exposure to HIV by engaging in safer sexual practices. Many intervention approaches aimed at changing sexual behavior among different populations have been developed. Interventions draw on a variety of theoretical bases, including individual-level (Fisher & Fisher 2000) and community-level (Rogers 2000) models. Of greatest relevance to this paper, a large number of programs have been implemented with women at risk of heterosexual transmission of HIV (for reviews, see Ickovics & Yoshikawa 1998; Lo-

gan et al 2002; O'Leary & Wingood 2000). Most U.S.-based intervention programs aimed at heterosexual women have focused on individual-level factors and been delivered in small-group settings (Ickovics & Yoshikawa 1998). In their review of HIV/STI interventions for sexually active heterosexual women (excluding commercial sex workers), O'Leary and Wingood (2000) noted that the majority recruited women in urban health-care settings, with a primary focus on the promotion of condom use.

Several recent reviews provide information regarding the success of behavior change interventions for heterosexual women. A meta-analysis of 30 randomized intervention trials implemented with high-risk heterosexual adults (Logan et al 2002) revealed small but significant overall effects, indicating that interventions led to increases in condom use and decreases in the number of sex partners. There were no gender differences in effect sizes for condom use ($r = .059$); the mean weighted effect size for number of partners was significant for women ($r = .073$, $p < .005$) but not men ($r = .002$, ns), suggesting that women were more likely than men to reduce their number of sex partners after participating in interventions. The findings are encouraging, but the authors noted that there was little evidence that initial behavior changes are sustained over time. Moreover, although the small number of studies in each category made drawing firm conclusions impossible, interventions involving women who were most likely to perceive themselves at risk of HIV infection appeared to be most effective: no significant effects for either condom use or number of partners were found for programs whose participants were recruited in primary health care settings as compared to STD clinics, drug treatment facilities, or low-income housing (Logan et al 2002). Reviewing programs for women around the world, Ickovics and Yoshikawa (1998) reported that 32 of 51 interventions led to "slight to moderate" changes in at least one measure of sexual behavior (usually condom use), with the most successful programs targeting commercial sex workers rather than general populations of heterosexual women. Based on their review, O'Leary and Wingood (2000) concluded that interventions tended to be most effective at promoting sexual behavior change among women who were not in long-term relationships.

The accumulated evidence indicates that even the most successful programs are of limited success in promoting sexual behavior changes among general populations of heterosexual women. Ten years ago, Amaro (1995) proposed that one major reason for this lack of success is that programs tend to be based on theoretical models of sexual behavior that are of limited applicability to women because they ignore the fact that sexual behavior takes place within social and cultural contexts; assume that sexual activity is under an individual's control (rather than being the result of impulse or coercion); and ignore the influence of sociocultural factors (e.g., gender roles, values, norms) on sexuality. Reflecting on the modest results of their meta-analysis, Logan and colleagues (2002) echoed these themes, stressing the need for prevention programs that acknowledge the relational context in which sexual activity typically occurs, target men or couples, and take a comprehensive approach to HIV prevention (e.g., combining HIV interventions with substance abuse treatment or primary care). O'Leary and Wingood emphasized the need to

> begin to address the economic, cultural, and sociopolitical issues that underlie the difficulty many women face in their efforts to protect themselves, (2000 196)

including power disparities and violence. Feminist scholars (e.g., Gupta 2000; Heise 1995) have pointed out how traditional gender relations place women at a disadvantage in sexual relationships. In response to these concerns, recent interventions have attempted to go beyond the individual level and consider broader influences on sexuality.

Some programs have focused on building social support and community norms that foster women's sexual risk reduction efforts. For example, Sikkema and Kelly (2000) described a multisite community level intervention implemented in 18 low-income housing developments in five U.S. cities. After baseline assessments were completed, housing developments were randomized to one of two conditions. Women living in housing developments assigned to the experimental group ("intervention developments") received a one-year community-level intervention that

involved opinion leaders in risk reduction workshops and the formation of Women's Health Councils to undertake prevention outreach activities and organize community-based events. Condoms and AIDS educational materials were made available to all women in the intervention housing developments. Women living in housing developments assigned to the control group ("comparison developments") were mailed a coupon for 10 free condoms and HIV/AIDS brochures. Baseline assessments and 12-month follow-ups conducted with 690 primarily African American women revealed that women in the intervention developments significantly decreased their HIV risk behavior, whereas those in the comparison developments showed little change. For example, the percentage of intercourse acts protected by condoms during the past two months increased from 30 percent at baseline to 47 percent at follow-up among women in the intervention developments; those in comparison developments showed little change (34% to 36%). The effects were magnified among women who had been exposed to more of the intervention activities. Results from this study suggest that community-level interventions can be successful in bringing about sexual behavior change among women.

Responding to the call that interventions target couples rather than individuals, a recent study examined the efficacy of a relationship-based program for heterosexual couples (El-Bassel, Witte, Gilbert, Wu, Chang, Hill, & Steinglass 2003). Women in long-term relationships with partners they knew or suspected engaged in at least one HIV/STI risk behavior (e.g., sex with another partner, injecting drug use) were recruited and asked to recruit their partner into the study. Both partners completed baseline measures and then couples were randomly assigned to one of three study arms: couples condition (six session intervention delivered to the couple); woman-alone condition (the woman attended the six session intervention without her male partner); education control (the woman received a one-session information session). Both partners completed follow-up assessments three months post-intervention. Participants in the couples and woman-alone conditions showed significantly safer sexual behavior than those in the control condition at follow-up; however, no significant differences were observed between women who received the intervention with their partners and those who received the intervention alone. The authors speculate that this was due to similar intervention content (both the couples and woman-alone conditions focused on relationship issues, and participants completed homework assignments with their partners) and self-selection (only 56% of eligible couples participated, and half of the cases of non-participation were due to male partner refusal, so women with highly resistant or abusive partners were probably under-represented in the study). The study findings are encouraging because they suggest that it is possible to promote condom use among couples in long-term relationships by focusing on how issues of trust and intimacy may act as barriers to HIV/STI protection. At the same time, the challenges of involving couples in HIV/AIDS interventions are apparent.

Other interventions explicitly address gender-related aspects of sexual relationships. One promising model is Connell's (1987) theory of gender and power, which elucidates sexual inequality and gender and power imbalances in relationships between men and women. Connell identified three major social structures that characterize male-female relationships: sexual division of labor, division of power, and the structure of cathexis (i.e., affective aspects of the relationship). Wingood and DiClemente (2000) identified HIV/AIDS interventions for women that reflected components of the theory of gender and power. Although few interventions were explicitly based on the theory of gender and power, there was support for individual components of the model. Recent interventions based on the theory of gender and power have shown success in promoting sexual risk reduction among incarcerated women (St. Lawrence, Eldridge, Shelby, Little, Brasfield, & O'Bannon 1997) and women living with HIV (Wingood, DiClemente, Mikhail, Lang, McCree, Davies, Hardin, Caliendo, Hook, & Vernumd 2004), suggesting the potential of this approach for HIV prevention with general populations of women (Harvey 2000).

In recent years, the construct of empowerment has been incorporated into HIV interventions for women. An example is a multifaceted program for Latina immigrant women in San Francisco named Mujeres Unidas y

Activas [active and united women] (MUA) (Gomez, Hernandez, & Faigeles 1999). MUA is an education, organizing and advocacy project aimed at empowering immigrant and refugee Latina women and the broader Latino immigrant community to bring about economic, political and social equality. HIV prevention was not the sole focus of the program, but was integrated into MUA activities, which included group meetings, support sessions, HIV workshops, leadership training, community participation activities, and a volunteer HIV peer educator program. An evaluation of 74 women who participated in baseline, 3-month, and 6-month interviews revealed that consistent condom use was low at baseline (41% of participants had ever used a condom, and 21% used one at last intercourse) and remained low at the 6-month follow-up (48% lifetime, 26% last intercourse). Participants did show significant increases in sexual communication comfort and sexual comfort over time, and decreased endorsement of traditional sexual gender norms. Among women with male partners in the past year, fear of coercion decreased; among those in steady relationships, the male partner's decision-making power was reported to have decreased. The findings indicate that community-initiated programs may be a valuable way of reaching women, but underscore the need for identifying methods of bringing about sexual behavior change within more general programs.

Another participatory approach is action research, which is rare in the U.S. but has been used effectively in other countries. One example is the program developed by the CONNAISSIDA group to address the HIV/AIDS epidemic in Kinshasa, Zaire. Action research "begins with the principle that people already know a great deal about their own situations" (Schoepf 1993 1403) and builds on this knowledge through social interaction to develop a critical consciousness about, in this case, sexual behavior and HIV and its causes. The group created culturally appropriate risk-reduction workshops targeting different groups of women (e.g., sex workers, church group members). Evaluations were conducted with 60 women who participated in the church group workshops. One-third reported that their husbands refused to use condoms and/or reacted with anger to the request that they do so, one-third said they were able to talk to their husbands about HIV/AIDS but were convinced by their husbands that the couple was not at risk, and one-third reported that their husbands had agreed "in principle" to use condoms. Participants noted a need to organize workshops for men, emphasizing the challenges women encountered in attempting to negotiate safer sex with their spouses.

As these examples illustrate, efforts to expand beyond the individual level show promise for reducing women's risk of HIV infection. However, because many women cannot control their male partners' behavior, there is an urgent need to focus prevention efforts on heterosexual men and address how male sexuality and gender-related factors contribute to the transmission of HIV.

REFOCUSING HIV PREVENTION EFFORTS ON MEN

> For all their sexual activity, for all the instances of sexual distress and anguish they inflict upon young women, young men pursue and are left to pursue sex and their understanding of it in almost total silence and in the absence of support. It is not surprising, therefore, that they get it wrong so often. (Dowsett, Aggleton, Abega, Jenkins, Marshall, Runganga, Schifter, Tan & Tarr 1998 305)

It has long been recognized that health outcomes are directly affected by gender-related factors, yet it is only recently that male gender roles and notions of masculinity have been explicitly considered in HIV prevention. This shift was prompted by the realization that a woman who is at risk from her partner's behavior rather than her own, or who lacks power in her personal relationships, will have limited ability to reduce her risk of HIV infection (Ehrhardt 1992; Logan et al 2002; Seal & Ehrhardt 2004). To address this reality, interventions must begin to address gender-related issues among men as well as women (Gupta 2000).

Few interventions that focus specifically on men have been developed, but discussions of how best to do so are becoming more common in the literature. A meta-analysis of 30 randomized HIV prevention interventions for adult heterosexuals identified just three programs exclusively for men (Logan et al 2002). Recently, Seal and Ehrhardt (2004) recommended that efforts to promote behavior change among heterosexual men

incorporate risk reduction messages that take into account existing sexual behavior patterns (e.g., promote condom use with non-primary partners rather than attempting to eliminate sexual activity with multiple partners) and build upon societal gender role norms (e.g., expand the notion of men as initiators of sexual activity by teaching men to initiate safer sex efforts). Other scholars stress the need to identify approaches that help heterosexual men recognize how their sexuality contributes to their own and their female partners' risk of HIV/AIDS (e.g., Campbell 1997; Gupta 2000). Attempts to do this can articulate how male sexuality puts both men and women at risk of HIV transmission by raising several key considerations. First, it should be emphasized that masculinity is culturally, socially and historically constituted (Kilmartin 2000) and can be expressed in many different forms (Courtenay 2000). Next, it must be acknowledged that men's behavior is constrained by traditional expectations about gender and these traditional models of masculinity place both men and women at heightened risk for HIV infection (Gupta 2000). In general, masculinity has been linked to poor health behaviors. Relevant to sexual behavior, men's health behaviors often demonstrate a dominant (hegemonic) notion of masculinity: a denial of weakness, virility, appearance of being strong, emotional and physical control. It is often in the pursuit of power and privilege that men are led to harm themselves (Courtenay 2000; Kandrack, Grant, & Segall 1991) and subsequently women. Traditional masculinities sometimes encourage men to force unwilling partners into sex, reject condom use and view drinking as a confirmation of their manhood (Campbell 1997; Heise 1995). Finally, it must be recognized that masculinities are tied to hierarchy and power relations: each culture or group shows more dominant and subordinate forms of masculinity (e.g., the masculinity of a sports figure may be valued more highly than that of a schoolteacher).

Although HIV prevention programs for heterosexual men have not been explicitly based on these constructs, community based interventions and empowerment approaches aimed at changing men's sexual behavior have been undertaken in the gay and bisexual communities in the U.S. (Sikkema & Kelly 2000). For example, the Mpowerment program, which builds supportive risk-reduction communities of young gay and bisexual men (Hayes, Rebchook, & Kegeles 2003), has been successful in fostering safer sexual behavior. The program was initially implemented in Euguene, OR; the delayed intervention comparison site was Santa Barbara, CA (Kegeles & Hays 1996). The program was designed by a "Core Group" of young men with input from a Community Advisory Board. Activities were aimed at diffusing HIV/AIDS prevention information and condom promotion messages through peer outreach, establishment of social settings where young men could gather, and organization of events that would provide outreach opportunities, including activities as diverse as house parties, picnics and art shows. Prevention messages were transmitted through small groups, informal outreach, and a media campaign. Approximately 100 gay men aged 18-29 from each community were assessed at pre- and post-intervention via mail surveys. The intervention site had a decrease in the proportion of men engaging in unprotected anal intercourse overall (41% to 30%), with non-primary partners (20% to 11%) and with a boyfriend (59% to 45%). No comparable changes occurred in the comparison group, suggesting the power of a collective approach that builds on community strengths.

There are also powerful lessons to be learned by looking at how countries around the world are addressing the heterosexual HIV/AIDS epidemic. For example, social marketing campaigns have been successfully implemented in several countries in Africa. In Zaire, a television soap opera was developed as part of a larger campaign to promote gender equity and safer sex. After famous actors were seen negotiating condom use in bedroom scenes, almost three-quarters of viewers said they were motivated to change their behavior (Communication Initiative 2004); furthermore, reports of mutual fidelity increased from 28.5 percent to 46 percent and condom sales increased by 443 percent within a one-year period (Ferreros, Mivumbi, Kakera, & Price 1990, in Wingood & DiClemente 2000). National level programs in other countries, including Switzerland's "STOP AIDS" campaign and Thailand's "100% Condom Program" support the notion that it is possible to bring about behavior change in heterosexual men (Auer-

bach & Coates 2000).

The international community has also responded to the message that men are especially crucial in the prevention of HIV. One example is a project being implemented by Instituto PROMUNDO, a non-governmental organization based in Rio de Janeiro, Brazil (Horizons 2004). This ongoing project is aimed at reducing HIV risk behaviors and sexual violence by changing young men's attitudes about gender roles and sexual relationships. In a quasi-experimental study, 708 young men from three different low-income areas of Rio de Janeiro were assessed before their communities were assigned to one of three intervention conditions: group sessions led by adult facilitators; community-wide social marketing campaign plus group education; and delayed intervention (control community). Participants are being assessed at 6- and 12-months on key indicators (e.g., gender role beliefs, violence, HIV-related behavior) and qualitative interviews are being conducted with a sub-sample of participants and their regular sexual partners. At baseline, endorsement of less equitable gender norms was significantly associated with higher incidence of sexually transmitted infections (STI), lack of contraceptive use, and physical and sexual violence against a current or recent partner. Preliminary findings from the two intervention sites indicate that a significantly smaller proportion of respondents supported traditional gender norms after being exposed to the intervention. Based on 6- and 12-month follow-up data, significant reductions in STI symptoms were seen in both intervention communities, and significant increases in condom use with a primary partner were seen in the combined intervention community. Moreover, changes in gender norms were associated with changes in HIV/STI risk outcomes. The findings demonstrate that interventions focused on gender dynamics can be successful in reducing men's sexual risk behaviors. The larger magnitude of effects in the combined intervention as compared to the group education intervention suggests the importance of community support for individual behavior change.

These examples support the notion that focusing on gender-related considerations and exploring the implications of traditional masculinity for men's sexual behavior may lead to changes in attitudes and behaviors linked to heterosexual transmission of HIV. Comparable interventions are lacking in the U.S. so it is impossible to tell how successful this type of program might be in the U.S. context. Nonetheless, the development of male-focused interventions represents an important direction for future research. One concern is whether men will participate in such interventions. There are some indications that men are less likely than women to take part in interventions. For example, half of non-participation in El-Bassel et al.'s (2003) couples study was due to male partner refusal. In the NIMH Multisite HIV Prevention Trial (1998), which recruited individuals to participate in small group interventions, only 86 percent of potential male participants who were screened at STI clinics and determined to be eligible for the study actually completed baseline interviews, compared to 91.5 percent of eligible female participants screened in the same clinics and 95 percent of women recruited in health serving organizations. Innovative strategies may be needed to overcome men's reluctance to take part in health promotion programs.

One potential avenue for reaching general populations of men in HIV prevention efforts involves bringing prevention programs to men's natural settings. One obvious setting is the workplace, which has been the context for information-based HIV programs in the U.S. (Wilson, Jorgensen, & Cole 1996). Taking this idea further, an innovative program for migrant gold miners in South Africa focused on behavioral change and attempted to take into account the broader social contexts affecting HIV transmission (Campbell & Williams 1999). Preliminary work by Campbell and colleagues examined mine workers' notions of masculinity and found that HIV preventions programs that target individual behavior change are minimally effective (Campbell 1997). Instead, the project viewed HIV transmission as a community problem. In addition to the mine workers, the program targeted the communities surrounding the mines, where workers conducted their social and sexual lives. The project used both traditional healers and biomedical practitioners; was managed not only by the mine management but by unions, grassroots organizations, and national health workers; and utilized community-based and peer outreach. Although the intervention showed only limited success (Will-

iams, Taljaard, Campbell, Gouws, Ndhlove, van Dam, Carael, & Auvert 2003), the strategy of embedding HIV prevention programs in the workplace and the larger community offers a model for future programs.

Other projects have identified additional venues for engaging men in HIV/AIDS prevention programs. One program in Kenya uses soccer as a natural meeting place for discussing HIV/AIDS and safer sex (UNICEF 2004). The Kibera Community Self-Help Programme, a local non-governmental organization supported by UNICEF, helps young volunteers conduct informal meetings about HIV after soccer matches in communities that have been heavily affected by HIV/AIDS. The volunteers create songs and impromptu theater in the hopes of changing the behavior and attitudes of their friends and kinsmen. Unstructured grassroots programs such as this do not readily lend themselves to randomized controlled evaluations and the impact of many similar programs around the world has not been assessed; despite this, they offer creative ideas for how to reach men.

In sum, the increased attention paid in recent years to developing interventions that explicitly address gender-related issues and target heterosexual men has yielded encouraging results and provides a basis for future interventions that will reduce women's risk of exposure to HIV. At the same time as the field of HIV/AIDS prevention advances to stem the heterosexual transmission of HIV, though, the epidemic is shifting and new populations of women at heightened risk are emerging.

FUTURE CHALLENGES FOR HIV/AIDS PREVENTION AMONG WOMEN IN THE U.S.

> I don't even know if I made the conscious effort to decide yes, this is the time and I'm actually gonna do it [have intercourse]. It just kind of happened which as I look back I feel that's unfortunate. I wish I had been able to think about it more and had been more assertive in saying, "whoa, I don't know if I'm ready at this particular time." (Latina woman describing her first sexual intercourse; Raffaelli 2001)

It is impossible to predict with any degree of certainty how the HIV/AIDS epidemic will unfold in the next 25 years in the U.S. However, there are indications that prevention programs addressing several currently neglected populations of women are needed. These include older women, women who do not self-identify as heterosexual yet engage in sexual intercourse with male partners, and teenage girls. In this final section, we briefly highlight considerations for prevention in these groups.

Sexuality is a core aspect of the human experience throughout the lifespan (Ehrhardt & Wasserheit 1991; Levy 1994), yet the literature is largely silent on the issue of HIV/AIDS among older women. In an early analysis of women infected with HIV through heterosexual contact, women aged 50 and over at the time of their AIDS diagnosis were compared to women under 50 years old at the time of diagnosis (Schable, Chu, & Diaz 1996). The two groups differed in ethnicity: women aged 50 or older at the time of diagnosis were more likely to be White or Hispanic/Latina, whereas those under 50 at initial diagnosis were more likely to be African American. Older women were more likely to have been exposed to HIV through sex with an HIV-infected man whose risk of exposure was unknown (59% vs. 42% of women aged under 50 at the time of diagnosis), and less likely to report sex with an injection drug user (31% vs. 48%). Hillman and Broderick (2002) identified HIV risk factors for post-menopausal women, including biological risks (e.g., thinning vaginal walls due to lower levels of estrogen after menopause are more likely to tear during intercourse, facilitating transmission of HIV), condom-related factors (e.g., lack of contraceptive need and limited socialization for sexual communication with potential partners), and partner-related issues (e.g., lack of knowledge about partners' potential risk behaviors). Because of increased survival rates as AIDS treatments improve, and the possibility of higher levels of sexual activity as elderly men take advantage of newly developed and aggressively marketed anti-impotence drugs, HIV/AIDS among older women is likely to increase in the future. Thus, an important direction for future prevention efforts will involve developing interventions for older women and their partners.

Women who have sex with women represent another group that will need increased attention as the epidemic progresses. This may seem counter-intuitive, as there are few documented cases of female-to-female transmission of HIV. However, case reports

of female-to-female transmission, as well as the well documented female-to-male transmission, show that vaginal secretions and menstrual blood are potential paths of transmission through mucous membranes (Hughes & Evans 2003; Morrow 1995). In an attempt to better understand the association between female-female sexual behavior and sexually transmitted infections, Bauer and Welles (2001) studied 286 women recruited at a gay/lesbian/bisexual pride rally. One key finding was that 13 percent of women with only female partners reported a history of STI, a rate clearly counter to a "no risk" group. Frequency of female-female sexual exposure was independently associated with increased odds of STI when controlling for female-male sexual behavior. Moreover, in 98 percent of cases of AIDS among women who have sex with women, risk factors other than female-female sex were present (e.g., injection drug use, sex with high-risk men) (CDC 2003b). Because sexual identity and sexual behavior may differ, there is a need to intervene with women who identify as lesbian but engage in activities that put them at heterosexual risk of HIV infection.

Adolescents represent perhaps the most promising population for intervention efforts, because they are in the process of establishing lifetime sexual behavior patterns. This population has not been neglected; as discussed below, many interventions targeting young people have been developed. Yet there are indications that current HIV-prevention programs are not having a substantial impact on young people in the U.S. As noted earlier, young women are increasingly contracting HIV through heterosexual transmission, and account for almost half of new HIV infections among 13-24 year olds. A discussion of factors contributing to young women's risk of HIV/AIDS is beyond the scope of this paper; risk factors include biological vulnerability due to the immaturity of the reproductive tract, which facilitates transmission of HIV, as well as psychological and social factors linked to sexual behavior (see Rotheram-Borus, O'Keefe, Kracker, & Foo 2000). Prevention efforts for adolescent girls are complicated by several considerations. First, sexual intercourse in this age group may be the result of male pressure or coercion, particularly among young teens (SIECUS 1997). Differential power between partners is also a factor; young women who have sex with older partners are particularly vulnerable to engaging in unprotected sex (Darroch, Landry & Oslak 1999). Intervention programs for adolescents must also consider how sexual behavior changes as youth gain sexual experience and begin forming partnerships. For example, condom use is common when teens start having sex, but as adolescent girls begin having sex regularly they tend to shift to other methods of birth control (Jemmott & Jemmott 2000). Condom use is also more typical at the start of relationships; as couple becomes more committed and trust is established, condom use decreases and use of other methods becomes more common (e.g., Fortenberry, Wanzhu, Harezlak, Katz, & Orr 2002). It is not clear to what extent HIV risk reduction interventions are effective in addressing these aspects of adolescent sexuality.

A number of interventions have demonstrated success in fostering safer sexual behavior among adolescents, although studies are often limited by short follow-up periods and low rates of sexual activity at baseline. One review found that over half (57%) of 23 HIV interventions evaluated in randomized controlled trials achieved significant sexual risk reductions (Pedlow & Carey 2003; Kim, Stanton, Li, Dickersin, & Galbraith 1997). A meta-analysis of interventions conducted in community samples of adolescents revealed a significant overall effect for condom use (Jemmott & Jemmott 2000). Finally, in a review of school-based interventions aimed at decreasing teen pregnancy and HIV, Kirby (2000) reported that some comprehensive sex education programs were successful in promoting sexual risk reduction.

Despite these encouraging overall results, it is unclear whether teenage girls and boys typically show the same level of risk reduction. The effectiveness of interventions for female adolescents is not reported separately in most meta-analyses and reviews, but there is some evidence that intervention effects tend to differ by gender. In some cases intervention effects are weaker for girls than boys (e.g., Stanton, Xiaoming, Ricardo, Galbraith, Feigelman & Kaljee 1996); in other cases, interventions show differential effects for male and female teens. For example, St. Lawrence and colleagues (1995) compared the efficacy of a single-session HIV/AIDS education session with an eight-session behavioral skills training intervention in a

sample of 246 African American adolescents recruited in a public clinic serving low-income populations. In this randomized control trial, participants in the behavioral skills intervention showed reduced levels of risk behaviors compared to youth in the control group through the one-year follow-up period. However, boys and girls in the intervention group showed different patterns of behavior at baseline, and there were gender differences in observed behavior post-intervention such that boys decreased their sexual risk-taking whereas girls maintained their initial (lower) levels of sexual risk-taking. In contrast, girls and boys in the educational control condition tended to increase their sexual risk-taking over time (if already sexually active at baseline) or initiate sexual intercourse (if they were inexperienced at baseline). Thus, the intervention appeared to help girls avoid increased sexual risk over time. Although it is impossible to tease apart which of the eight sessions are responsible for the specific effects, the intervention included sessions on behavioral skills to resist sexual pressure and verbal coercion, and the development of specific plans for avoiding unwanted sex.

The need to address gender-related issues is reflected in results of a recent intervention with sexually experienced African American young women (aged 14-18) who were randomly assigned to participate either in an intervention that emphasized ethnic and gender pride, HIV-related knowledge and skills, and healthy relationships or in a nutrition and exercise control intervention (DiClemente, Wingood, Harrington, Lang, Davies, Hook, Oh, Crosby, Hertzberg, Gordon, Hardin, Parker & Robillard 2004). Relative to the control participants, intervention participants showed decreases in multiple measures of sexual risk behaviors (e.g., unprotected sex, inconsistent condom use) that were sustained over a 12-month follow-up period.

Based on these findings, it appears that additional consideration of gender-related issues could provide valuable insight regarding how best to promote sexual risk reduction among both female and male adolescents. By fostering safer sexual behavior in teenagers, prevention programs should ultimately contribute to lower HIV/AIDS rates as young people grow up and move into adulthood.

CONCLUSIONS

It is becoming increasingly clear that prevention efforts must move beyond a focus on individual women to curb heterosexual transmission of HIV. Interventions must consider the realities of women's lives, take into account the contexts in which sexual encounters occur, and involve men as well as women. Moreover, many women's only risk of HIV infection results from having unprotected sex with a primary partner; thus, broad-based prevention efforts will be needed to supplement intensive interventions aimed at "high risk" populations.

The move from targeted to general interventions is likely to be challenging in the U.S. Because the HIV/AIDS epidemic has been concentrated among population sub-groups, interventions have tended to be focused rather than general. There has been resistance to using the mass media for HIV prevention in the U.S. (Ehrhardt 1992), despite evidence of the effectiveness of marketing approaches in changing attitudes and behavior (Auerbach & Coates 2000). School-based interventions — which have the potential to reach virtually all individuals in the country in a cost-effective manner — are subject to political pressures that reduce their effectiveness (DiClemente 1993). Currently, local and federal policies in the U.S. constrain the content of school-based programs; federal funding is available to states willing to provide "abstinence-only-until-marriage" sexuality education (but not comprehensive sexuality education), and 35 percent of school districts require abstinence-only programs (Pardini 2002/2003). This is unfortunate because there is mounting evidence that such programs are largely ineffective, whereas comprehensive sex education is effective in fostering risk reduction without increasing sexual activity among teens (see Jemmott & Jemmott 2000; Kirby 2000).

In countries that hold more open sexual attitudes, comprehensive programs aimed at the general population have shown considerable success. For example, in Sweden (which has a low overall rate of HIV/AIDS), sexual health is a national priority and mandatory sex education in all public schools pre-dates the onset of the HIV/AIDS epidemic (Herlitz & Steel 2000). The curriculum is age-graded and developmentally appropriate, beginning in primary school with basic re-

productive information and progressing to more detailed information about contraception and sexually transmitted infections in secondary school. A network of regional health clinics provides access to reproductive information and care. The effectiveness of Sweden's HIV/AIDS program has been evaluated through periodic cross-sectional surveys of random population samples. Among other observed changes, condom use among young people increased from 1987 to 1997. It is noteworthy that Sweden's openness toward sexuality is associated not with sexual permissiveness, but "rather the ability to make informed and responsible decisions regarding sexuality" (Herlitz & Steel 2000 889).

As heterosexual transmission of HIV becomes more common in the U.S., it will be necessary to initiate a national dialogue about how to protect everyone at potential risk from exposure to HIV/AIDS. New risk reduction approaches are needed that take into account the complex interplay of factors contributing to HIV risk among heterosexual women. In particular, there is an urgent need to refocus prevention efforts on men and boys, and identify theoretical models that provide avenues for behavior change interventions among heterosexual males. In this paper, we have suggested that program developers and policy makers in the U.S. can learn from the innovative strategies that have been implemented around the globe. By identifying and implementing participatory and empowerment-based approaches, it will ultimately be possible to reduce the impact of heterosexual transmission of HIV/AIDS in the U.S.

ENDNOTE

[1] This paper was completed in 2004, but publication was delayed due to factors beyond the author's control. Therefore, work published after 2004 was not considered.

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PATTERNS OF INTIMATE PARTNER VIOLENCE AMONG DRUG USING WOMEN

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ABSTRACT

Following from growing concern with the role of violence in intimate relationships, this paper examines the relationship between partner violence dynamics and illicit drug use among women in Hartford, CT. Based on an interview sample of 497 street-recruited, not-in-treatment, drug-involved women, the paper compares drug use and health risk among women in four types of relationships: 1) those without self-reported violence; 2) those in which there is violence targeted at a female partner; 3) those in which the violence is perpetrated by the female partner; and 4) those in which there is bi-directional or mutual violence. Findings suggest that drug treatment programs that serve women should therapeutically address the issue of intimate partner violence.

Recent scholarship in the domestic violence literature has explored the complex relationship between substance abuse and intimate partner violence (IPV) (Amaro, Fried, Cabral & Zuckerman 1990; Bennett 1995; Caetano, Cunradi, Clark, & Schafer 2000; Cunradi, Caetano, Clark, & Schafer 1999; Cunradi, Caetano, & Schafer 2002; El-Bassel, Gilbert, Witte, Wu, Gaeta, Schilling & Wada 2003; Goldberg 1995; Leadley, Clark, & Caetano 2002; Lown & Vega 2001; Sharps, Campbell, Campbell, Gary, & Webster 2001). Although the initial focus of this work was on the substance abusing behaviors of batterers, there is a growing interest, as well, in substance misuse by victims of such violence, particularly women (Cunradi et al 2002; El-Bassel et al 2003; Gilbert, El-Bassel, Rajah, Fontdevila, Foleno, & Frye 2000). Specifically, this latter work has examined both the ways in which the grim necessity of addiction leaves certain women vulnerable to IPV (in that these women may be dependent on their partner for money, shelter, protection, or access to drugs), and the uses of mood altering substances by victims to self-medicate the deleterious emotional effects of violence victimization (Duke 2002; Wu, El-Bassel, Witte, Gilbert, & Chang 2003; Romero-Daza, Weeks, & Singer 2003; Singer 2006). However, intimate relationships are not uniform in terms of the direction of physical violence, particularly in regards to the relationship between partner violence victimization and gender. In other words, although women in heterosexual relationships are more likely to be victims of partner violence than are men, some nonetheless take on the role of batterer. Likewise, as Tjaden and colleagues (1999) have indicated, rates of partner violence in female same-sex relationships are roughly comparable to those of heterosexual couples. Finally, acts of violence within an intimate relationship can be reciprocal, rather than unidirectional. In order to understand the relationship between substance abuse and intimate partner violence in all its complexity, it is thus important to explore the full panorama of relationship dynamics vis-a-vis IPV, including: relationship history; social support; directionality of partner violence; prior exposure to sexual violence; and drug procurement and sharing behaviors of romantic partners.

This paper examines the relationship between partner violence dynamics and illicit drug use among substance-involved women in Hartford, CT. Utilizing a sample of 497 street-recruited, not-in-treatment heroin and/or cocaine (including crack cocaine)-involved women, the paper compares substance abuse and related behaviors among women in four alternative (current or most recent[1]) relationship types: 1) those in which there is no reported physical violence; 2) those in which there is unidirectional violence directed against the woman; 3) those in which there is unidirectional violence by the woman against her partner; and 4) those in which there is reciprocal or mutual violence.

Methods

The study described here[2] was implemented in the city boundaries of Hartford, CT. Hartford currently has a population estimated at approximately 130,000 people, with

Table 1: Binomial Physical Violence Scores and Intimate Partner Violence (IPV) Group Assignment

IPV Group	Ego-as-Victim	Ego-as-Perpetrator
Partner Violence Victim (PVV)	1	0
Partner Violence Perpetrator (PVP)	0	1
Mutual Partner Violence (MPV)	1	1
Non-Abusive Relationship (NAR)	0	0

an ethnic composition that is 45-50 percent African American, 30-35 percent Hispanic (primarily Puerto Rican), and 20 percent White and other. Hartford is estimated to be the fourth poorest moderate-sized city in the U.S., with high rates of unemployment, community violence, drug abuse, and AIDS cases (Himmelgreen & Singer 1998).

Participants were recruited in areas of the city known from past studies to have comparatively high numbers of drug users, drug-related activities, and drug use/acquisition sites. Outreach workers—who matched the target population by gender, language, and ethnicity—walked through these areas and walked up to and engaged in conversation with women encountered on the street. Usually, conversations began with the offer of condoms and led quickly to a brief description of the project. Potential participants were asked a brief set of questions to determine their eligibility for the study. Women were deemed eligible if they met the following criteria:

1) between 18-58 years old;
2) reported having used heroin or cocaine during the previous 30 days;
3) reported not being in drug treatment (including detoxification and self help programs) during the last 30 days.

Candidates were excluded from participating: 1) if project staff concluded—based on their observations—that a woman was unable to comprehend the informed consent process (because she offered inappropriate responses to consent questions); or 2) if the candidate participant made verbal threats or actually engaged in violent behavior (neither of which occurred).

Woman interested in participating who met the inclusion criteria and were not eliminated by the exclusion criteria were given an appointment to be interviewed at the offices of the Hispanic Health Council. At the time of appointment, women were again screened using the inclusion and exclusion criteria, and, if accepted into the study, participated in the informed consent process and then were interviewed with the project instrument battery. After the hour long interview, if deemed appropriate by the interview coordinator and project coordinator, project staff made a voluntary referral for intervention services or, if needed, emergency services.

Assignment of relationship type was determined by responses to the physical violence prevalence items of the partner violence subscale (Form N) of the Conflict Tactics (CT) Scale developed by Straus (Straus 1979; Straus & Gelles 1990). The CT scale is a widely used instrument for measuring intra-family conflict and violence. The subscale elicits the frequency, recency, and duration of specific minor (e.g., verbal abuse, pushing, shoving) and severe (e.g., beatings, threats or actual use of weapons) acts of violence directed toward them by their domestic partner. For each item the participant was asked to identify prevalence, frequency, and severity of violence committed against her by her partner (ego-as-victim). Cronbach's alpha for the Violence subscale is .80. In the version modified for this study, for each item participants were also asked whether they had committed those acts of violence against their partner (ego-as perpetrator).

In order to describe patterns of intimate partner violence among drug using women, data from the current and recent relationships were combined into a single category. The first step of the analysis was descriptive. Participants were described regarding selected socio demographic characteristics (e.g. age, ethnicity), substance abuse history and types of their IPV relationship. In the second step, chi square tests were undertaken to address differences in terms of lifetime history of violence and also address the group differences in term of the drug using behaviors of respondents' of current/most recent partner. A two tailed alpha of $p<0.05$ was considered statistically significant in bivariate analysis. All data was analyzed using SPSS software version 10.0.

Based upon their responses to the physi-

Table 2: Relationship Group Distribution for Last Three Relationships

Relationship Type	Current/Recent Relationship (N=499)	2nd Most Recent Relationship (N=440)	3rd Most Recent Relationship (N=250)*
PVV	10.7	18.9	14.8
PVP	08.5	03.9	04.8
MPV	39.0	35.5	40.4
NAR	41.9	41.8	40.0

*Percentages may not sum to 100% due to rounding.

cal violence items[3], two binomial scores were then calculated (0=answered negatively to all of the physical violence items; 1=answered affirmatively to one or more physical violence items) for both the ego-as-victim and ego-as-perpetrator scales. A score of 1 in the former scale and 0 in the latter assigned that participant to the Partner Violence Victim (PVV) category, while a reverse score (ego suffered no physical violence victimization, but engaged in physical violence against her partner) placed her in the Partner Violence Perpetrator (PVP) group. Respondents with a score of 1 for both ego-as-victim and ego-as-perpetrator scales were assigned to the Mutual Partner Violence (MPV) group, while those scoring 0 for both scales constituted the Non-Abusive Relationship (NAR) group. This categorization scheme was utilized for participants' current or most recent relationships, as well as their second and third most recent relationships. The assignment of respondents to each of the four groups is summarized in Table 1.

There are certain limitations to this analytical strategy, particularly in terms of reciprocal violence. For example, the survey data do not measure the sequence of violence (i.e., whether the participant or her partner initiated acts of violence) nor whether one member of the romantic dyad engaged in partner violence as a form of self-defense against the other. Nonetheless, a focus on each of these four types of relationships yields clear differences in terms of history of childhood sexual violence, drug use patterns, economic strategies, relationship dynamics and social support.

Research Sample

In terms of the racial/ethnic distribution of the sample, 38.6 percent were African American, 39.4 percent were Hispanic/Latino, and 17.4 percent were Euro-American, which roughly corresponds to the demographic composition of Hartford as a whole[4]. Differences between racial/ethnic groups in terms of IPV relationship patterns were not statistically significant. The average age of the women in our sample was 37.8 years (standard deviation = 8.0). There was no significant relationship between age, race/ethnicity, or education and IPV group membership. Of the 497 respondents, 279 (56.1%) were in romantic relationships at the time of their interview[5]. Ten percent of respondents reported that their current or most recent relationship was with a woman, while 0.2 percent reported that their current/most recent partner was transgendered. However, there was no significant group difference between heterosexual and same-sex partners, nor heterosexuals and transgendered partners in terms of their assignment in one of the four partner violence groups.

Turning to the four IPV groups, 41.9 percent (n=208) reported that there were no incidents of physical violence between themselves and their current or most recent partner, and were thus assigned to the Non-Abusive Relationship group (NAR). In contrast, the PVV or Partner Violence Victim group (those who reported being physically abused by their partner but not vice versa) comprised 10.7 percent of the sample (n= 53). A somewhat smaller percentage (8.5%, n=42) reported physically abusing their current or most recent partner, although not vice versa (Partner Violence Perpetrator group or PVP). Finally, a full 39 percent (n=194) reported mutual physical violence in their current/most recent relationship (Mutual Partner Violence group or MPV) (see Table 2).

Because the physical violence scale encompasses a wide range of injury, it is important to distinguish between relationships solely consisting of moderate violence and those which include reported incidents of what we term "severe intimate partner violence" (SIPV), which we define as those where beatings, stabbings and/or shootings reportedly occurred. Among the PVV group,

Table 3: Distribution of IPV Group Categories in the Second Most Recent Relationship by Current/Most Recent Relationship Group Membership

IPV Group (N=438)	2nd Most Recent Relationship PVV	PVP	MPV	NAR
PVV (n=48)	**29.2**	2.1	31.3	45.7
PVP (n=38)	13.2	**13.2**	42.1	31.6
MPV (n=179)	16.8	4.5	**36.9**	41.9
NAR (n=173)	19.7	1.2	33.5	**45.7**

Bold indicates remaining in same relationship type. Percentages may not sum to 100% due to rounding.

nearly half (45.5%, n=55) were victims of SIPV, while 30.2 percent (n=43) of those in the PVP group initiated severe forms of violence against their partners. Among the Mutual Partner Violence group, 35.0 percent of respondents were victims of SIPV, while 40.3 percent engaged in SIPV against their partner, meaning that in over five percent of MPV relationships the severity of self-perceived respondent violence perpetration was greater than the severity of their victimization.

History of Violence

We encountered significant differences between participants in the four relationship groups in terms of lifetime history of violence. For example, there are significant group differences (x 2=.001) in terms of being victims of sexual abuse prior to age 18 (n=121). Respondents in the Partner Violence Perpetrator (PVP) group were much more likely to report victimization (45.2%) than those whose current or most recent relationship was non-abusive (NAR) (17.7%). Those in the victim (PVV) group and mutual partner violence (MVP) group were in between, at 28.3 percent and 27.4 percent, respectively.

In terms of prior relationship history, respondent distribution in the four relationship categories is generally consistent between current/most recent relationships and participants' second and third most recent relationships (see Table 2). However, there is a somewhat lower likelihood of PVV group membership in current/most recent relationships (10.7%), than in the second and third most recent relationships (18.9% and 14.8%, respectively). In contrast, respondents are much more likely to be in the PVP group in their current/most recent relationship, than they were during their second (3.9%) and third (4.8%) most recent relationships. It is unclear from the survey data whether reduced likelihood of non-reciprocal violence victimization and increased likelihood of unidirectional violence perpetration in respondents' current/most recent relationships is a product of response bias (i.e., respondents may be less likely to characterize their current partner as abusive or themselves as victims) or whether prior abuse for some woman may result in exercising control over their current or most recent partner.

However, the likelihood of remaining in the same category from one relationship to the next is not as apparent as the above figures may suggest, since there is a notable degree of fluctuation between relationship category membership between respondents' current/most recent relationship and their second most recent relationship (see Table 3). For current/most recent PVVs, for example, the highest percentage (37.5%) of group membership in their second most recent relationship was in the Non-Abusive group, a pattern also found in the MPV group (41.9%). It is worth noting that, although the largest percentage of the Non-Abusive Relationship (NAR) group remained in the same relationship category between their current/most recent and second most recent relationships, the majority of their previous relationships contained incidents of IPV (45.7%).

Survival Strategies and Health Status

There was a significant group difference in terms of receiving money from "hustling," a proxy for both legal (e.g., panhandling, bottle collecting) and illegal (e.g., theft, drug sales, commercial sex work) money-making strategies within the informal economy (x 2=.002). The highest percentage of women who utilized this economic strategy were in the MPV group (65.2%), followed by the PVP group (61.9%). In contrast, this strategy was utilized by less than half (46.3%) of the Non-Abusive Relationship (NAR) group and 55.8 percent of the PVV group. In response to the question, "Have you ever given sex for drugs or a place to stay?", there was a moderate group difference (x 2=.044), with those in the PVV group being more likely to have done so (53.8%) than those in the NAR group, who were the least likely (38.8%). Positive responses for the MPV and PVP groups were 51.5 percent and 42.9 percent, respectively. The distribution of responses was some-

Table 4: Conflicts Between Romantic Partners Over Splitting Drugs (In Percents)

	Taking the other's drugs without asking		Taking more than "fair share" of split drugs	
IPV Group	Partner blamed ego (N=327)**	Ego blamed partner (N=329)**	Partner accused ego (N=328)**	Ego accused partner (N=327)**
PVV	38.2	25.7	57.1	51.4
PVP	22.2	29.6	37.0	55.6
MPV	41.8	43.2	55.2	54.9
NAR	13.3	09.1	23.1	17.4

**p<.01

what different in response to the question, "Have you ever given sex for money?" While 67.9 percent of the PVV group had engaged in sex work for money, the lowest percentage of positive responses were from those in the PVP group (47.6%). Of the MPV group 63.9 percent and 50.7 percent of the NAR group had carried out sex work (*x* 2=.011).

There was no significant group difference in terms of self-report for most of the thirteen illnesses associated with drug use, including, Hepatitis B, Hepatitis C, and HIV. However, there were moderately significant group differences (*x* 2=.045) in terms of whether respondents had ever been diagnosed with a sexually transmitted disease (STD) (MPV= 24%; PVP=19%; PVV=17%; NAR=13%) or a mental illness (MPV=50%; PVP=45.2%; NAR=37.6%; PVV=32.1%). As these figures indicate, those in relationships in which reciprocal violence occurs were more likely to have been diagnosed with an STD or a mental illness than their counterparts in the other groups. Although the survey did not include questions regarding types of mental illness, the latter is of particular interest in that there is a sharp divide between those respondents who engage in IPV (either mutually or unidirectionally) and those who do not.

Partners' Substance Abuse and IPV

The data yielded a moderate group difference in terms of the illicit drug using behaviors (not including marijuana) of respondents' current/most recent partner. Of 473 respondents who answered the survey question regarding whether their partner had ever used illicit drugs during the relationship, 329 (69.6%) responded affirmatively (*x* 2=.015). Those in the Mutual Partner Violence group were much more likely to have a drug using partner (77.2%) than were those Non-Abusive Relationship group (62.1%). Partner violence victims (PVV) and perpetrators (PVP) were in between, at 68.6 percent and 71.1 percent, respectively.

Contrary to expectations, those in relationships with a drug using partner in which there is no partner violence (NAR) were much less likely to assist their partners in securing drugs than those in other types of relationships. Also somewhat surprising is that respondents who have been the victims of non-reciprocated violence (PVV group) were not the most likely to engage in such activities. For example, in response to the question "Did you ever sell drugs in order to get drugs for this partner?" (N=328), only 11.6 percent of those in non-violent relationships answered affirmatively, as compared to 28.6 percent of those in the PVV group (MPV= 32.4%, PVP=29.6%; *x* 2=.001). Likewise, only 11.8 percent of the NAR group reported that they ever sold sex for money or drugs in order to get drugs for their partner, while 22.9 percent of PVV group did so (PVP=25.9%; MPV=25.5%; *x* 2=037). In both instances, a significant percentage of participants in relationships in which mutual violence had occurred (MPV group) participated in these activities on behalf of her partner. Even more surprising, a significant percentage of those who had engaged in non-reciprocated violence against their partner (PVP group) sold sex or drugs in order to secure drugs for their partners. However, when the partner pressures the respondent, the distribution is notably different. Drug using partners in the nonreciprocal violence victims group, for example, were significantly more likely than those in the other groups (20%) to have insisted that the participant boost or steal in order to get drugs for him/her (N=328; MPV= 15.9%; NAR=4.1%; PVP=3.7%; (*x* 2=.003).

Among women whose romantic partners used heroin and/or cocaine (including crack cocaine), there was no significant group difference in terms of whether these partners split drugs with them. Despite this, tensions surrounding the splitting and sharing of

Table 5: Mean Scores of Social Support and Action Towards Leaving the Relationship

	Social Support (N=497)*		Action Towards Leaving (N=297)**	
IPV Group	Mean	Standard Deviation	Mean	Standard Deviation
PVV	2.53	0.39	2.61	0.88
PVP	2.69	0.43	2.14	0.77
MPV	2.68	0.45	2.36	0.76
NAR	2.75	0.43	1.95	0.68

*p<0.05; **p<0.01

drugs seem to provide a nexus of physical conflict. In response to the question, "Has this partner ever blamed you for taking his/her drugs without asking him/her?", for example, those in the MPV and PVV groups were much more likely to have responded affirmatively (41.8% and 38.2%) than those in the remaining two groups (see Table 4). Likewise, those in the Mutual Partner Violence group were more likely to blame their partner for taking their drugs without asking (43.2%) than those in the other groups. For each of the four sharing conflict items, the percentages of affirmative responses in the NAR group were significantly lower than those in the groups where IPV has occurred. This strongly suggests a positive association between conflicts over drug sharing and partner violence history within that relationship, whether directed towards ego, ego's partner, or both.

Social Support and Action Toward Leaving the Relationship

For people in abusive relationships, access to social support networks can play a critical role in moderating the negative effects to well-being that result from IPV exposure, as well as providing the emotional and material resources to leave that relationship. However, women in abusive relationships may feel a high degree of anxiety, embarrassment, or other forms of reluctance, in asking members of their social circle for help (Choice & Lamke 1999). Furthermore, abusing partners frequently exert considerable effort to keep their partners socially isolated from family and friends, in order to increase their dependence (Avni 1991; Mitchell & Hodson 1983; Hilberman & Munson 1977-1978). Indeed, as Tan and colleagues have noted (1995), increases in the rate of physical violence by abusive partners are associated with increased withdrawal from social support networks on the part of the victim. Thus, for women in abusive relationships, the mediating factor that is most likely to provide emotional and material support can be difficult to maintain (El-Bassel et al 2003). For a drug involved woman, accessing networks of social support entails particular challenges, since she may be dependent on her partner for money, alcohol, or drugs, and her substance misuse may have alienated her from friends and family. Often her circle of friends consists of other substance abusers, who may not able to be provide the level of material and emotional support that she needs.

The Social Support Behavior Scale (SS-B) (Vaux, Riedal, & Stewart 1987) was used to measure the extent to which participants had access to supportive networks. Using a four-point Likert scale participants were asked to use past experience to indicate the likelihood that a relative or friend would perform specific supportive activities. The scale taps emotional support, socializing levels, practical assistance, financial assistance, and provision of advice, and has an internal consistency of .90. In order to assess actions taken by participants to end their relationships, we used the Action Toward Leaving (ATL) scale, a 14-item measure of termination strategies developed by Wilmot and colleagues (1985). Participants were asked to indicate, via a four-point Likert scale, the frequency of use of three factor-analyzed categories of tactics to terminate the relationship: verbal directness, verbal indirectness, and nonverbal withdrawal (Cronbach's alpha=.94). ATL thus measures communicative acts engaged in by the respondent to emotionally and socially disengage from the relationship. The scale was used only for participants who were in a romantic relationship at the time of their interview.

As shown in Table 5, availability of social support is strongly associated with relationship type, with those in the Partner Violence

Victim group scoring lower than those in the other groups, while those in Non-Abusive Relationships scored highest. Action toward leaving the relationship was moderately associated with relationship type, with those in the NAR group scoring lowest and those in the PVV group highest. This distribution indicates that, like those in physically abusive relationships in the general population, substance-involved women who are victims of IPV face patterns of systematic estrangement from their social network, quite apart from the loosening of social bonds resulting from their addiction. The fact that the PVV group scored significantly higher on the ATL scale is particularly intriguing, because it indicates that women in abusive relationships are not merely passive victims. Rather, they practice what might be termed "everyday forms of resistance" (Scott 1985) within the relationship, using avoidance, emotional withdrawal, and other tactics to, if not leave the relationship, then at least create a degree of subjective autonomy within it.

Discussion

The analysis presented above outlines a number of group differences between the four relationship types. However, while the causes of some of these differences are fairly intuitive, others are less so. The latter is due in no small measure to the fact that respondents have belonged to different relationship groups throughout the life course, and thus it is likely that their attitudes and behaviors in the current/most recent relationship are influenced by past experiences. In this section, we will discuss the findings for each of the groups in turn.

Non-Abusive Relationship (NAR) Group—Despite the fact that there is significant movement across relationship groups from one relationship type to the next, the NAR group was by far the largest group for each of the three sequential relationships examined for each participant (current/most recent; second most recent; third most recent). This distribution indicates that, contrary to popular stereotypes, not all drug involved women are condemned to a life of violence and abuse at the hand of their romantic partners, but are capable of participating in stable romantic relationships. Even when a woman's partner is also a drug user, the relationship is not necessarily unstable or prone to violence (Simmons & Singer 2006).

NAR group participants shared relatively low levels of participation in the informal economy (apart from their role as consumers of illicit drugs) as compared with women in the remaining relationship groups. For example, NAR group participants were significantly less likely to engage in "hustling" or to have ever sold sex than their counterparts in the other three groups. Interestingly, this tendency to keep the informal economy at arm's length also extends to selling sex or drugs in order to secure drugs for their partner. Thus, contrary to the expectation that drug-involved, non-violent romantic partners would provide mutual support in helping the other secure drugs, participants in this relationship group had little involvement in their partners' drug procurement. Likewise, the NAR group was the least likely to have conflicts over the splitting and sharing of drugs, indicating that the tensions of procuring, splitting, and sharing are important features of violent conflict. Drug splitting occasions can be tense because they often occur when users are experiencing drug craving and have the cure for their problem at hand. Couples that either avoid sharing or share drugs without conflict tend to avoid partner violence.

Partner Violence Victims (PVV) Group—Comprising nearly 11 percent of the research sample, members in this group were more likely to report severe intimate partner violence (which involves being beaten, stabbed, or shot) than those in the Mutual Partner Violence group: 45.5 percent vs. 35.0 percent. The association between being a non-reciprocated victim of partner violence and violence severity undoubtedly stems from the lack of physical sanctions faced by the perpetrator (or, conversely, awareness of a partner's proclivity for extreme violence may intimidate a woman from even attempting defensive violence). However, relationships in which there is non-reciprocated violence are also quite different—interpersonally, psychologically, and in terms of power relations—than those in which mutual violence occurs. Johnson and Ferraro (2000) refer to systematic, unidirectional domestic violence against women by their partners (measured in terms of frequency, severity, recency, and duration) as intimate terrorism. Intimate terrorism is grounded in one partner's motivations for power and control over the other partner. The psychosocial dynamics of intimate terrorism are therefore distinct from relationships in

which each partner engages in violent behavior against the other, since the former consists of asymmetrical physical—and consequently behavioral and psychological—control over a partner. This sense of control is reflected in the fact that members of this group are much more likely to have a drug using partner insist that she boost or steal in order to secure drugs than those in the other groups. Thus, over the long run intimate terrorism tends to produce victim depression and learned helplessness (Walker 1984).

Not altogether surprising was the fact that the PVV group had the lowest measure of social support, reflecting the sometimes considerable effort on the part of batterers to keep their partners socially isolated from family and friends, in order to increase their dependence (Avni 1991; Mitchell & Hodson 1983; Hilberman & Munson 1977-1978; Dobash, Dobash, & Cavanagh 1985; Tan et al 1995). As stated above, it is particularly noteworthy that PVV respondents were much more likely to have taken action toward leaving their relationship than those in the other groups, indicating that these women continue to exercise a significant degree of agency within the confines of an abusive relationship, particularly in terms of seeking ways to extricate themselves from that relationship (Choice & Lamke 1999).

Partner Violence Perpetrator (PVP) Group—The smallest of the four relationship groups (8.5%), PVP respondents were the least likely to have been in a nonviolent relationship in their prior relationship. This suggests that their response to prior partner violence—whether as victim, perpetrator, or in a mutually violent relationship—is to take on the role of batterer in the current or most recent relationship. Interestingly, despite the fact that members of this group were the least likely to have ever engaged in sex work for money, they were the most likely to have sold sex for money or drugs specifically in order to secure drugs for their partners. This apparent altruism in terms of providing drugs for their partner seems to contradict their role of batterer in the relationship, although it is likely that engaging in these activities would result in resentment, which may on some occasions result in violence, particularly against partners who, apparently, are not likely to reciprocate with violence of their own. Furthermore, the fact that they are most likely to have accused their substance using partner of taking more than their fair share of drugs that they have split suggests that accusation involving drug sharing is a potential trigger of violence.

Mutual Partner Violence (MPV) Group—The largest of the groups in which partner violence occurred, a key feature of MPV respondents is that they were much more likely to have drug using partners than were those in the other three groups. This strongly suggests the significant role that the pain and tension of drug withdrawal plays in triggering episodes of mutual partner violence.

MPV participants with drug using partners engaged in significant acts of mutual support. For example, respondents in this group were the most likely to sell drugs in order to obtain drugs for their partner. In addition, a nearly equal percentage with those in the MPV group sold sex for money or drugs in order to obtain drugs for their partner. From this standpoint, MPV participants place themselves at considerable risk (of street violence, of possible arrest, of disease exposure) in order to secure drugs for their partners, regardless of whether they are also engaging in these activities in order to obtain drugs for themselves.

However, the strain of addiction places unique strains on the relationships of drug using partners which can, in turn, lead to mutual acts of violence. As noted above, the axis of tension—and, potentially, of violence—in these relationships seems to revolve around the splitting and sharing of drugs. Of the four relationship categories, for example, the MPV group was more likely to have blamed their partners, or to have been blamed by their partners, for taking the other's drugs without asking. In addition, they were also the most likely to have been accused by their partner of having taken more than their "fair share" of drugs that they had split. Thus, the grinding pursuit of cash to purchase drugs, coupled with the tension of providing mutual support within the relationship while also obtaining a sufficient quantity of drugs for each partner, can lead to significant levels of stress, and at least potentially to physical confrontation.

Conclusion

Female drug users are highly diverse in terms of their romantic relationship patterns, particularly in terms of physical intimate part-

ner violence. Contrary to popular stereotypes of drug users as socially isolated or as people who would take advantage of anyone to get drugs, our findings show that drug users are capable of fully participating in romantic relationships, even when both members of the romantic dyad are substance involved. Furthermore, intimate violence is not an inherent feature in these relationships, as evidenced by the fact that the Non-Abusive Relationship group was the largest of the four in terms of participants' current or most recent relationship. Further research is therefore necessary in understanding these relationships. In particular, research should focus on indigenous forms of conflict resolution and mutual support among substance involved romantic partners, in order to understand better the ways in which potentially violent situations are avoided or diffused within those relationships.

However, the fact that drug involved women are much more likely to be victims of intimate partner violence throughout the life course than US women as a whole also indexes the importance of designing violence prevention and protection programs that take addiction status into account. Few programs exist, for example, that offer stress and anger management or self defense for women in addiction. Even more glaring is the lack of access to safe, anonymous, and well-protected shelter (e.g. "battered women's shelters") for women in addiction, the latter of which is a fundamental resource for those wishing to leave an abusive relationship. Because of multiple liability, childcare, security, and logistical concerns, substance abusing victims of partner violence are barred from admission to these facilities. It is therefore imperative that research-based harm reduction strategies be initiated to address partner violence in all its manifestations among this vulnerable population.

Our findings also have relevance for understanding drug use, commercial sex, and AIDS risk as reflecting far more than individual choice or morality. In the case of relationships involving violence victimization, but in relationships where violence among partners is mutual as well, interpersonal violence may be an important force driving individual behavior. Women who are victimized by partner violence, and then face social opprobrium for self-medicating drug use or for engaging in risky behavior, are doubly victimized (Weeks, Grier, Romero-Daza, Puglisi, & Singer 1998). It is thus critically important that partner violence prevention and advocacy accompany AIDS prevention and drug abuse intervention programs, in order to reduce violence in the lives of their clients.

ENDNOTES

[1] Current and most recent relationships were collapsed into a single category since there was no significant group difference between these two groups in terms of their demographic characteristics, drug use patterns, and distributions in the four IPV relationship categories.

[2] This study was funded by the National Institute on Drug Abuse, Merrill Singer, Principal Investigator.

[3] Although we recognize verbal abuse as a form of violence, we exclude the verbal abuse items of the Partner Violence scale from the current analysis since, in the absence of context, acts are ambiguous in terms of whether they constitute abuse or result from extenuating circumstances (misunderstandings, etc.) Furthermore, the entire sample of respondents who reported physical violence victimization and/or perpetration also reported positively to the verbal abuse items.

[4] The remaining 4.6 percent of respondents were re-calculated as Other.

[5] Respondents were allowed use their own criteria of what constitutes a romantic relationship, provided that the relationship in question had lasted at least two weeks.

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A DOSE OF DRUGS, A TOUCH OF VIOLENCE, A CASE OF AIDS, PART 2: FURTHER CONCEPTUALIZING THE SAVA SYNDEMIC

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ABSTRACT

This paper builds on prior discussion of the concept of syndemics in the social science and public health literatures to further define and extend the utility of this construct in analyzing the relationships among substance abuse, violence and HIV/AIDS. The term syndemic refers to a set of closely entwined and mutual enhancing health problems that "working together" in a context of noxious social and physical conditions can significantly affect the overall disease burden and health status of a population. The paper focuses on the emergence of what is termed the SAVA (substance abuse, violence, AIDS) syndemic among several populations that are at high risk because they are subject to social discrimination, stigmatization, and subordination, namely abused children and battered women, men who have sex with men, illicit drug users, and commercial sex workers.

In the course of a multi-year, 1988-present, program on HIV risk prevention research among inner city drug users in Hartford, CT—a community-based program that has included a number of federally funded studies of drug use patterns among several different populations of drug users—it became apparent that studying HIV in isolation of other diseases and conditions also prevalent in these populations was a distortion. Indeed, it became clear that even the term epidemic does not sufficiently describe the contemporary US inner city health AIDS crisis. A crisis that may be characterized by the spread of AIDS that is closely associated with a set of other endemic and epidemic conditions (e.g., TB, STDs, hepatitis, cirrhosis, infant mortality, drug abuse, suicide, homicide, etc.). These conditions are intertwined and strongly influenced and sustained by a broader set of societal factors. Factors that include high rates of unemployment, poverty, homelessness, residential overcrowding, substandard nutrition, infrastructural deterioration and loss of quality housing stock, forced geographic mobility, family disruption, attenuation of social support networks, health care inequality, racism, and domestic as well as street violence (Bourgois 1995; Stall & Purcell 2000; Wallace 1990; Waterston 1993).

As a result, our Hispanic Health Council research team proposed the term "syndemic" (Singer 1994, 1995) which refers to the interrelated complex of health and social crises facing the urban poor. Like the terms epidemic and pandemic (i.e., spreading health problems of local or extra-local distribution), the suffix of syndemic is derived from the Greek word *demos* ("the people," but in a health context refers to a disease that is diffusing in a population), while the prefix is taken from the Greek term for "working together."

In short, a syndemic is a set of closely entwined and mutual enhancing health problems that "work together" in a context of noxious social and physical conditions, can significantly affect the overall disease burden and health status of a population. For example in January, 2004, the World Health Organization announced a decision to support expanded collaboration between tuberculosis and HIV/AIDS programs to curb the growing spread of TB/HIV co-infections. The new WHO policy guidelines define the public health activities that were needed to address what is now referred to as "the dual epidemic of TB and HIV." According to Lee Jong-Wook, Director-General of the WHO,

> TB/HIV is a deadly combination and needs to be tackled with an approach treating the whole person. (World Health Organization 2004 1)

But this syndemic is just one of several in which HIV is a primary disease component.

Recently, in our efforts to futher delineate the concept of syndemic, we have drawn attention to the fact that disease interaction occurs at both the population and individual levels (Singer & Clair 2003). At the population level, the term syndemic refers to two or more epidemics interacting synergistically and contributing as a result to an excess disease load in a population (Frumkin 2002; Homer & Milstein 2002; MacQueen 2002).

As Milstein observes,

> Syndemics occur when health-related problems cluster by person, place or time. The problems—along with the reasons for their clustering—define a syndemic and differentiate one from another (though they may have nested or overlapping relationships). (2001 2)

As this definition suggests, at the population level HIV maybe entwined with several different other diseases, each forming a somewhat different distributional cluster (e.g., hepatitis in one part of a geographically dispersed or socially segmented population and one or more sexually transmitted diseases in another part of a population). In time, of course, these independent syndemics may merge into what might be called a "superdemic." An occurence that syndemic theory predicts is most likely in populations that suffer multiple structural disadvantages and the result is in the interconnected breakdown of social structures, social relationships, and immune defenses.

At the individual level, the term syndemic refers to the health consequences of the biological interactions that occur when two or more diseases or health conditions are co-present in multiple individuals within a population (Alcabes, Schoenbaum & Klein 1993; Ensoli & Sirianni 2002; Farzio, Bueler, Chamberland, Whyte, Sivanajan Froelicher, Hopkins, Reed, Mokotoff, Cohn, Troxler, Phelps, & Berkelman 1992). For example, in a substudy of over 5,000 men that were enrolled in the Multicenter AIDS Cohort Study between 1994 and 2000, Thio and co-workers (2002) divided the sample into four groups: individuals with HIV only, those with hepatitis B, those with both infections, and those who were disease-free. They found that liver disease-related death was highest in the dual infected subgroup and was especially high among those with low CD4 cell counts, a sign of advanced HIV infection. Men infected with hepatitis B and HIV were 17 times more likely to die of liver disease than those infected with just hepatitis B. Similarly, Pugliese and colleagues (2002a), have shown that HIV+ women who are also infected with both the human papillomavirus (HPV), a cause of cervical cancer, and herpes simplex virus (type 2) have a higher level immunodepression than those who are not also co-infected with these other diseases. The added damage to the immune system produced by co-infection with HPV and herpes facilitates the rapid development of HIV infection and subsequent devastating consequences. Other studies by this research team on the effects of co-infection found that HIV+ women infected with human herpesvirus type 8 (HHV-8) exhibited accelerated deterioration of their immunologic and hematologic conditions when compared to HIV+ women coinfected with other sexually transmitted diseases (Pugliese, Torre, Saini, Pagliano, Gallo, Pistono, & Paggi 2002b). In other words, the important issue at the individual level is not just co-infection or co-presence of two or more diseases, but the enhanced infection and physical consequences due to disease interactions.

Social context, including both the physical conditions in which people live their lives, as well as the hierarchical structure of social relations and their consequences in everyday life, is a critical component of the syndemic concept. In contrast to traditional clinical approaches to conceptualizing disease, the types of social conditions that increase the likelihood that various diseases will be concentrated in a population and that certain populations will be particularly vulnerable to co-terminus diseases, are of central concern in syndemic research and public health/medical response. For example, researchers at Johns Hopkins University School of Public Health followed a cohort of over 450 primarily Black (95.8%) male (76.3%) injection drug users in Baltimore during the years between 1988 to 1999. At intake, participants were all HIV+, but were asymptomatic. Two years after enrollment in this study, 32 of the participants had progressed to an AIDS diagnosis, for a cumulative incidence rate of 7.1 percent. Questionnaires completed by participants showed that 43.8 percent of those who had developed full-blown AIDS reported a high level of psychological distress at intake compared to 22 percent of individuals who did not convert to AIDS. Multiple regression analyses found that reporting distress in one's life was associated with a significantly elevated risk (adjusted hazard ratio = 2.39) for the development of AIDS (Golub, Astemborski, Hoover, Anthony, Vlahov, & Strathdee 2003).

In our own studies, we have found that inner city injection drug users tend to experience many risks and stressors (e.g., home-

lessness, uncertain access to needed drugs, police harassment, threat of infection) but being at immediate and continual risk of violence (in various forms) is particularly distressing. Consequently, exposure to violence (directly, as a victim, or even indirectly, as a witness to the victimization of others, especially significant others) was identified early in our work on syndemics as a condition of particular importance. Indeed, in our studies of drug abuse, violence, and AIDS in Hartford over the last 17 years, it has become clear that these three grave threats to health and well-being are not really disconnected phenomena. As a result, we proposed the term SAVA (substance abuse, violence, and AIDS) to label these as a syndemic comprised of three closely linked and interdependent health conditions that co-exist in the bodies and the social worlds of many low-income individuals in urban environments (Singer 1996). Of course, the SAVA syndemic is not confined to Hartford. Rather, this widespread national and even global syndemic has taken a devastating toll on the lives of the urban poor in many countries. Barring significant health and social interventions, SAVA threatens to continue to wreck pain and havoc into the future.

Some dimensions of the enmeshed relationship among substance abuse, violence and AIDS have been studied. These include the social conditions that led to direct and indirect sharing of drug injection equipment and the consequent spread of AIDS; the role of crack-cocaine in particularly demeaning sex for drugs/money transactions that lead to AIDS transmission; the contribution of turf-wars and broken contractual agreements among drug sellers to drug-related violence; and the role of an AIDS diagnosis in enhancing levels of drug use in some individuals for some period of time. Other suspected connections are unclear, such as the frequency of violence against women who proposed condom use by condom-resistant men; the precise role of violence victimization in the initiation and continuation of drug use as a form of self-medication; the impact of various expressions of structural violence on AIDS risk behavior; differences in level of drug withdrawal agitation and intense drug craving in interpersonal violence; and the contribution of childhood sexual abuse on adult drug use and AIDS risk. Building on our earlier assessment of the SAVA syndemic (Singer 1996), the purpose of this paper is to contribute to the further conceptualization of syndemics generally and the SAVA syndemic specifically by examining expressions and dimensions of SAVA in several populations that are subjected to social discrimination, stigmatization, and subordination, namely abused children and battered women, men who have sex with men, illicit drug users, and commercial sex workers.

SAVA AND VICTIMS OF INTERPERSONAL VIOLENCE

Domestic violence has become a grave concern in the societies of North America and elsewhere. Research that speaks to the role of domestic violence in the SAVA syndemic includes both studies of childhood sexual and physical abuse, on the one hand, and intimate partner violence, on the other. The headlines of newspapers emphasize grim statistics: studies show that child abuse occurs in 30-60 percent of family violence cases that involve families with children (Carter, Weithorn, & Behrman 1999). Approximately four million teenagers in the U.S. have been victims of a serious physical assault, while nine million have been witnesses to severe violence during their lifetimes (Kilpatrick & Saunders 1997). Each year, 3-10 million children in the U.S. witness domestic violence.

In the literature on domestic violence, a common explanatory theme is that ïviolence begets violenceî (Widom 1989). Usually, this relationship is thought of in interpersonal terms. Thus, researchers have noted that low self-esteem, in conjunction with limited social support, is closely linked to violence victimization and the development of a life pattern of revictimization (Sobo 1995). Prior life history is a critical feature used in explanations of domestic violence. Those who commit child abuse often have histories of having been abused as children themselves. Consequently, interventions often have ïbreaking the cycle of violenceî as their objective.

While it is likely that the psychological injuries of abuse find expression in responsive acts of violence, a narrow focus on interpersonal violence ignores another important source of violence that many people, particularly the poor and working classes, people of color, and women and sexual minorities endure, namely structural violence perpetuated by the major institutions in society

against denigrated and subordinated populations. As Farmer explains, structural violence refers to

> a host of offenses against human dignity [including]: extreme and relative poverty, social inequalities ranging from racism to gender inequality, and the more spectacular forms of violence that are uncontested human rights abuses... (2003 1)

It is within this contexts of structural violence that the intersection of domestic violence, substance abuse, and AIDS risk is disproportionately common. Structural violence, in short, begats much interpersonal domestic violence and the accompanying faciliators and consequences of violence including drug use and AIDS risk behavior.

In recent years, there has been a proliferation of research on childhood sexual abuse, with considerable attention paid to the lifetime consequences for victims. Research findings show a relationship between child sexual abuse victimization and emotional disturbances like anxiety and depression, sexual problems ranging from risky practices to sexual dysfunction, and substance-related illnesses like food disorders, alcohol abuse, and drug abuse (Beitchman, Zucker, Hood, Dacosta, Akamn, & Cassavia 1992; Briere & Runtz 1987; Brown & Anderson 1991; Bushnell, Wells, & Oakley-Browne 1992). Community studies have shown that 7 to 33 percent of adults report childhood sexual abuse (Russell 1983; Stein, Golding, Siegel, Burnam, & Sorenson 1988; Wyatt 1985). Women who report that they were subjected to childhood sexual abuse have been found consistenly to be more likely than women in the general population to seek treatment for alcohol and drug-related problems (Kovach 1983; Miller, Downs, Gondoli, & Keil 1987; Rohsenow, Corbett, & Devine 1988; Sterne, Schaefer, & Evans 1983). For example, Miller and co-workers (1993) found that women in alcohol treatment reported significantly higher rates of childhood sexual abuse than either women in the general population or women without an alcohol-related problem receiving treatment for a mental health issue. These researchers found that the association between childhood sexual abuse and alcohol-related problems remained even after they controlled for sociodemographic and genetic factors (e.g., parental alcohol problems). A number of studies of adult female victims of child sexual abuse have found higher rates of both alcohol and other drug abuse than women who were not sexually abused or women in the general population (Briere & Runtz 1987; Brown & Anderson 1991; Goodwin, Cheeves, & Connell 1990; Pribor & Dinwiddie 1992). Further, in a general population study, the Los Angeles Epidemiologic Catchment Area (ECA) survey (1983-1984), found that 6.8 percent of women participants reported that they were victims of "forced sexual contact" before the age of 16. In this study there was a significant association identified between reporting such a history and the later development of alcohol and drug dependence (Burnam, Stein, Golding, Siegel, Sorenson, Forsythe, & Telles 1988; Scott 1992; Stein et al 1988). Similarly, a national telephone survey (Kilpatrick, O'Neill, Beak, Resnick, Stugis, Best, & Saunders 1990) found that childhood sexual assault was significantly associated with current substance abuse among women.

Intimate partner violence (IPV) is another critical component of the SAVA syndemic. Estimated rates of partner violence among women who use drugs are two or three times greater than in general population samples of women (Bennett & Larson 1994; Brewer, Fleming, Haggerty, & Catalano 1998). The relationship between partner violence, substance abuse and HIV risk is complex. On the one hand, it can involve substance abuse by either perpetrators, or victims, or both, and, on the other hand, can involve clear cut violence victimization or reciprocal violence among partners (Amaro, Fried, Cabral, Zuckerman 1990; El-Bassel, Gilbert, Schilling, & Wada 2000; Gilbert, El-Bassel, Rajah, Foleno, Fontdevila, Frye, & Richman 2000). Where violence victimization is a factor, a dynamic process can be activated, involving: a) a partner, battering that is triggered by the perpetrator's use of drugs; b) illicit drug use by the victim to self-medicate the damaging emotional effects of violence victimization; and c) engaging in risky sexual and drug-related behaviors. While women in heterosexual relationships are usually the victims of partner violence, this is not always the case.

To examine the relationship between substance abuse, violence and HIV risk more closely, El-Bassel and co-workers (2000) in-

terviewed 31 women in drug treatment who reported physical or sexual violence committed by an intimate partner. Of those women who recalled recent experiences of intimate partner violence, almost all (83.8%) reported drug use during the incident. In 40 percent of these cases, both partners were using drugs, while in 35 percent it was only the perpetrator who was using drugs. About a fifth of the women (19.3%) indicated that they used drugs immediately after the violence had ended as a way of dealing with their emotional upset and physical pain. Additionally, about a fifth of the women reported that they had been forced to have unprotected sex during the most recent incident of violence or just after it ended. These researchers note

> women in our sample attributed their experiences of abuse to their partnerís drug use and to a lesser extent to their own drug use ÖWomen in this study are at very high risk of contracting HIV and HCV, for multiple reasons. Only a minority of our sample have ever used condoms with their partners although a majority reported that they or their partners have had outside relationships. (Gilbert et al 2000 406)

In our own research on drug using women at the Hispanic Health Council[1], we found it important to differentiate the women into one of four relationship groups. About two-fifths of the women (41.9%) reported that there were no incidents of physical violence between themselves and their current or most recent sex partner. Ten percent of the women reported that they were the victims of partner violence. Another 8.5 percent of the women reported that they physically abused their current or most recent partner, but they were not themselves victims of partner violence. Finally, almost 40 percent reported mutual physical violence in their current or most recent relationship (Duke, Teng, Clair, Saleheen, Choice, & Singer 2006).

Women who were subject to violence victimization by partners were more likely to report suffering more severe forms of violence, including being beaten, stabbed, or shot than those women who were involved in mutual violence with their partners: 45.5 percent vs. 35.0 percent. In answering a question about whether they had sold drugs in order to raise money for their partner, only 11.6 percent of those in non-violent relationships reported this behavior compared to 28.6 percent of those women who were victims of intimate partner violence. Similarly, only 11.8 percent of women who reported that they ever sold sex for money or drugs in order to get drugs for their partner were in non-violent relationships, while 22.9 percent of those who were victims of partner violence did so ($p<.01$).

In short, we found that drug-involved women who were in abusive relationships were significantly more likely to engage in risky behaviors raising drug money for their partner than other women. This finding suggests that one of the ways the SAVA syndemic unfolds in this population is that some drug-involved men use particularly severe forms of violence with their female partners. And these women, in turn, are more likely to put themselves at risk for HIV or for street violence than are other women who use drugs. Severe intimate partner violence begets HIV risk and risk for additional violence.

SAVA AMONG MSM

The highest absolute number of both new HIV infections and AIDS cases occur among men who have sex with men (MSM). For the most part, studies of HIV risk among MSM have focused on sexual risk with comparatively little attention given to the dual risk category of MSM drug users, men who are placed in harmis way both through drug use and sexual behavior. However, the CDC (2002) reports that increasing proportions of HIV infections are occurring among men who report dual risks from both drug injection and risky sex with men, especially for men of color. In their comparison of sexual risk behaviors among MSM who also inject drugs with MSM who do not inject drugs, OíConnell and colleagues (2004) found that the former are younger and more likely to be HIV-seropositive than the latter.

In Stueve and co-workersí study (2002) of 3,075 MSM aged 15-25 years, study participants were asked about their last sexual contact with primary and secondary partners, including whether they were ihigh on drugs or alcoholî at the time. Almost one fifth (18.6%) who reported having a primary partner that they used drugs during their last sexual encounter, and 25 percent said they had anal sex without a condom. Among men without primary partners, 29.3 percent reported drug use during their last sexual episode, and only 12.3 percent reported unprotected anal in-

tercouse. Using drugs was associated with unprotected receptive anal intercourse with nonprimary partners (odds ratio = 1.66, p = .02). Some drugs like crystal methamphetamine have played a particularly significant role in persistent high risk sex among MSM (Reback & Grella 1999; Shoptaw, Reback, & Freese 2002). Use of this drug, for example, is common among men diagnosed with HIV and other sexually transmitted infections (Bernstein, Tulloch, Montes, Golan, Dyer, Lawrence, Dodagoda, Rottblatt, Kerndt, Funn, DeAugustine, & Weismuller 2001).

Among AIDS cases in the U.S., currently eight percent fall into the dual risk category of being an IDU and MSM. Unfortunately, HIV/AIDS surveillance data do not provide information on noninjecting drug use and HIV infection among MSM. However, our research at the Hispanic Health Council with MSM in Hartford, Connecticut suggest that trading sex for drugs and/or money or engaging in high risk sexual practices as a result of drug use is disproportionately common in this population (Singer & Marxuach-Rodriquez 1996; Clair & Singer 2004).

Several factors have been found to increase HIV risk among men who have sex with men in the United States, including multiple drug use, partner violence, childhood sexual abuse and depression (Carballo-Dieguez & Dolezal 1995; Dilorio, Hartwell, & Hansen 2002; Jinich, Paul, Stall, Acree, Kegeles, Hoff, & Coates 1998; Relf, Huang, Campbell, & Catania 2004; Stall, Mills, Williamson, & Hart 2003). These factors are thought to interact producing an increase both in drug-related risk and high-risk sexual behaviors (Barthalow, Doll, Joy, Douglas, Bolan, Harrison, Moss, & McKirnan 1994; Cohen & Densen-Gerber 1982). Stall and coworkers found these associations in a household telephone survey of 2,881 MSM in New York City, Chicago, Los Angeles and San Francisco. Moreover, the percentage of MSM in the study reporting high-risk sex behavior increased steadily from 7.1 percent among those with none of the four health problems to 33.3 percent for those suffering from all four. For men who lacked any of the co-factors, 13 percent were HIV+ compared to 25 percent who reported all four co-factors. Consequently, these workers affirmed the existence of a SAVA syndemic among MSM that has its roots in childhood sexual abuse. Childhood sexual abuse contributes to depression in adulthood, entrance into abusive adult relationships, the use of multiple drugs, and experience with high levels of HIV risk and infection. This suggests that the factors interact, are mutually reinforcing, and are best addressed in tandum rather than as separate threats to health.

Similarly, Relf and co-workers (2004) measured the prevalence of battering victimizationówhich they defined as the experience of psychological/symbolic, physical, and sexual batteringóin the same sample of MSM analyzed by Stall. They found that rates of battering were quite high compared to heterosexual men and that HIV serostatus was associated with being the victim of physical and psychological/symbolic violence, but not sexual violence. Further they found that battering victimization is the key mediating variable between being subjected to childhood sexual abuse, having a gay identity, having various adverse early life experiences, and subsequent HIV risk behaviors. In short, these studies among MSM suggest the importance of a set of syndemic factors beginning with childhood exposure to abuse, later exposure to intimate partner violence, particular psychological reactions, drug use, and high-risk sexual behavior.

SAVA AND STREET DRUG USERS

Tony, a participant in Hispanic Health Council drug research (Singer 2006), explained his most recent bout with violence, a near-fatal revenge stabbing initiated by a drug dealer that Tony had ibeatî [stolen drugs from] as follows:

> When I was walking down the street, waiting for her [his girlfriend] to come back from her trick [commercial sex], I was going up towards Washington Street.... Thereis like this little alleyway. I take that alleyway because itís a short cut, everybody knows that. Thatís where they got me. They started to attack me and one dude sliced me like that [indicating a jagged 12 inch slash across his chest on the left side].

A 38-year old man of mixed Italian background, Tony had been using drugs heavily for twenty-five years, had both been victim and a perpetrator of drug-related violence since childhood. The violence began with harsh beatings administered by his father; daily beatings intended to correct his alleged

transgressions. These continued during adolescence as he defended his ground in the bellicose world of street-corner drug dealing, a practice taught to him by his father. During his young adulthood, violence, in the form of brutal assaults of wayward members, was a regular part of his role as an "enforcer" in a drug-selling street gang. Indeed, violence, in one form or another, was an enduring component Tony's life until he contracted AIDS through his daily drug injection.[2]

This study explains differences in violence, drug/alcohol use, and HIV risk among study participants and in participant personal networks (Singer 1999b). Data collection was targeted at three levels: a) at the individual level, by implementing a prospective study design that allowed systematic quantitative and qualitative data collection every four months with a street outreach-recruited sample of drug users from targeted neighborhoods; b) at the social relationship level, by identifing and interviewing a set of index individuals and members of their personal drugs and sex network (Singer et al 1999b); and c) at the social context level, by assessing key context characteristics (e.g., unemployment, crime) and contextual threats experienced by sample participants in four target neighborhoods. The final sample included 224 participants with data collected at intake and 4, 8, and 12 months follow-up.

Heroin was found to be the most commonly used drug (64% of participants) during the 30 days period prior to the initial interview of study participants, followed closely by alcohol. In descending order of importance, other commonly used drugs in this sample were speedball, crack, powder cocaine, and tranquilizers. As compared with our prior studies of street drug users in Hartford over the last 10 years, in which we have consistently found comparatively high rates of heroin injection among Puerto Rican drug users, we found a significant number of non-injection heroin users - 29 percent of heroin-users in the sample - this suggests either a shift in the pattern of consumption or the tendency of network methods to tap a different strata of drug users than street outreach. For those who inject heroin, the median rate of injection was 70 times during the previous 30 days. Thirty percent of injecting participants injected 120 or more times during the last month (Singer 1999a). Non-injection heroin use was less common, with a median of 10 times per 30 days. Frequency of alcohol consumption had a U-shaped distribution, with participants at the bottom quartile reporting drinking on 1 or 2 days during the last month and those in the top quartile reporting drinking on 25 or more days.

Turning to the issue of violence, we identified a wide range of violence exposure and involvement types among study participants. Seventy-four percent of our participants reported witnessing fighting in the streets of their neighborhood during the last 4 months (Romero-Daza, Weeks & Singer 1998). Violence in the streets was said to be especially common by participants, with "once or twice a week" being the median frequency. The other most common type of recently witnessed violence was domestic violence, which, notably, was reported by 54 percent of study participants. Gang violence (45%), robbery and muggings (42%), and beatings or stabbing (31%) were the next most common types of violence participants reported they had witnessed. As these findings indicate, street drug users are experientially exposed to a considerable amount of violence on the streets and in their homes in which they are neither victim nor perpetrator. It became evident in our study that witnessing violence is an important element in assessing the interrelationship of violence, drug use and HIV risk.

Considering all forms of direct "involvement" in violence (including emotional abuse)–as either victim or perpetrator—, 39 percent of the sample reported being a victim over the past 4 months, while 30 percent reported being a perpetrator of some form of violence. Specific rates of violence victimization affirm that exposure to violence is not a distant phenomenon in the lives of street drug users. A third of participants reported being the victims of emotional abuse during the prior 4 months. Additionally, 14 percent reported being the targets of physical violence and 7 percent indicated they suffered serious physical violence during this period.

Indeed, violence is a component of everyday life among drug users as indicated by the following participant who explained his strategy for defense against the constant threat of violent attack:

> I was up against the corner, and I was sitting on that little bench, the little couch. A

> guy came up and said, 'Give me everything, your watch, everything.' He had a knife... He had me trapped in the corner. And the way he had me, you know. It was like, 'give it up, and this and that.' And see, if I had seen it coming, I would grab... you see, I always carry a bottle.... I'll crack that over someone's head. They'll think twice about robbing me with a knife or not.... I think he was using "ready" [cocaine]. He probably wanted to get a hit, because I had dope on me and he came in with a girl. And he was like, 'Give me the dope too!.'

Significantly, nine of the drug users in our sample responded that they had been the target of attempted murder. Participants also revealed their own role as perpetrators of violence against others during the last four months. Ten percent admitted committing acts of violence, while two respondents indicated that they had attempted murder during the 4 month period.

Of the incidents of violence victimization reported by participants, 71 percent of physical violence involved the use of drugs or alcohol. In the reported incidents of serious physical violence, the rate of substance use rose to 75 percent. In cases where the study participant was the perpetrator, the reported use of psychoactive substances was 75 percent when they committed emotional abuse, 80 percent for acts of physical violence against another person, and 100 percent in serious physical violence and attempted deadly acts of violence. Notably, 44 percent of our participants indicated that involvement in violence (as either victim or perpetrator) contributed to increases in their rate of drug consumption. Also of interest, 14 percent reported a decrease in the frequency of drug use as a result of involvement in violence, including two participants who gave up using drugs as a result (Duke, Teng, Simmons, & Singer 2003).

Among women participants (about 1/4 of the sample), 16 percent reported being victims of violence during the last 4 months. In cases of violence against women, the perpetrator was more likely to be a family member or someone known to the woman than was the case in victimization among men (100% vs. 75%). Notably, women were also more likely to increase drug use following violence victimization. Additionally, women were more likely to report that it was hard for them to escape exposure to violence (38% vs. 27%) (Dushay, Singer, Weeks, Rohena, & Gruber 2001).

In an ethnographic component of the study, we conducted qualitative interviews with a subsample of 30 participants, most of whom were men. These individuals provided graphic descriptions of the experience of violence in their lives (Romero-Daza et al 1998). For example, several participants described witnessing murders. One participant, who suffered the emotional consequences of witnessing violence, stated:

> This is haunting me still about when I seen they killed this man and everything.... They beat this man up and he was dead. I think all the blows and everything, and they took his head and hit him on the floor and that killed him.... And now one of my brothers is in jail cause he shot another man. Cause if he wouldn't have shot that man, he would have killed my brother for a bike the other man wanted.

Another stated,

> I used to sell drugs [and] this guy killed this woman in the alleyway behind my door and I seen it happen and, you know, I was scared.

Prison is an environment in which many of our participants witnessed a considerable amount of horrific violence, as one study participant indicated:

> Well, in jail sometimes the people would get together, you know, a lot of people, and they used to beat up a lot of people, they would hit them, they would rob them and they would do all kinds of barbaric things. Sometimes they would rape them also. I saw a lot of things, a lot of fights, I also saw, they would stab them also, I saw knives also.

Noting the reflective emotional effects of being a perpetrator of violence, another participant stated:

> So then I started shooting up and that's when I started going crazy...you know like getting sick, real sick, starting to do bad things, stealing robbing...like taking money away from people...and I used to have a

> gun. My cousin had a gun and he used to give it to me so I can go rob people, like drug dealers, take their drugs. A lot of crazy stuff like that I come to think about now and I be like, damn, man, I could have been dead.

Gang involvement, which is extensive among younger drug users in Hartford, was related to a considerable amount of violence perpetration by our participants. This is exemplified by one individual who participated in a number of gang ibeatdownsî and stabbings. In one instance, he was called upon by gang leaders to beat another inmate. He recalled:

> There was one guy one day, he molested somebody - a little kid...and we put a blanket over his head, and we started beating down. We took some socks and put some locks inside the socks and started hitting the guy...

This individual also reported involvement in a drive-by shooting as a result of his gang affiliation, stating:

> They just send me to go and shoot somebody. I never did it, the other two guys did it. We went to the block and started shooting everybody in there.

Partner violence was also reported during qualitative interviews. One woman participant reported,

> I thought that if I would leave him, my kids, you know, theyíre going to suffer because they didnít have a father and stuff like that, so I stayed but, after three, four years, I left ...He broke my leg. He pushed me down the stairs and broke my leg. You know how you get black and blue and stuff like that? He used to hurt me like that. My body was all sore. So, I took the train and went to New York, to my cousin.

Nilda, a 26-year old woman who had been using heroin for 7 years at the time she was interviewed, reported:

> My husband was twice my age. He used to beat me up all the time. He was a very jealous man. He wouldnít even let me look out the window. He will tear my clothes off and he will keep me locked in the house. That made me feel I needed to escape. I wanted to be like a free bird and when I finally found myself free thatís when everything happened. I started with marijuana and then I moved to crack and then to heroin. Every time I had a chance to get out I would buy some rock [crack] and use it in secret. I felt trapped. I was with him for 20 years. I couldnít talk to anyone. If he saw me talking to anyone, he would say I had something with that person; man or woman. He wouldnít hit me in front of people but as soon as we got home he would hit me. Heíd throw dishes at me. He would hit me with his fists.

Community-based studies, including ethnographic examination of actual temporal, sequential, or other associations between drug use, HIV risk and violence, are needed to further clarify the actual nature of the relationships that exists between these intertwined epidemics that have had a notable effect on morbidity and mortality in low income and minority communities. However, it is evident that the SAVA syndemic is a significant aspect of the life experience of street drug using populations, including contexts away from the street like jails and prisons. Particularly severe forms of violence are found in this population punctuating the everyday violence associated with conflicts over drug deals, disagreements during the sharing of drugs, police harassment, lack of reliable shelter, and drug user on drug user use of force to extract items of any value, however minimal.

SAVA AND COMMERCIAL SEX

As Silliman and Bhattacharjee emphasize,

> women in prostitution are particularly at risk of gender-based violenceóincluding physical, psychological and economic violenceó from pimps, buyers, police and boyfriends. (2002 210)

This fact has often been hidden behind a public health focus on prostitution as a vector of disease. Notes Janice Raymond and colleagues,

> The minimal documentation of the harm and trauma of prostitution and trafficking may in large part be due to the fact that prostitution

> has not been recognized as a form of violence against women and the ambivalence, on the part of many researchers, NGOs and governments, to view prostitution as a violation of women's human rights. (Raymond, D'Cunha, Dzuhayatin, Hynes, Rodriguez, & Santos 2002 296)

None the less, violence is a common experience among commercial sex workers. For example, Parrirot (1994) who interviewed 68 women in Minneapolis/St. Paul who had been involved in commercial sex for at least six months in various setting, including the "street," massage parlors, and escort services, found that 62 percent had been raped, half had been physically assaulted; and one third were assaulted by customers at least several times each year. About one fourth of the women suffered broken bones and two were beaten into a coma (Parriott 1994). Similarly, a survey of 55 commericial sex workers in Portland, Oregon, found that the majority (78%) reported being raped by pimps and male customers on average 49 times a year. Additionally, 84 percent were the victims of aggravated assault, often sufficient to require emergency room treatment; 53 percent were sexually abused or tortured; and 27 percent were mutilated (Hunter 1993).

Based on a study of commercial sex in four countries, Raymond and her co-workers report the existence of a complex relationship between substance abuse and violence in this population:

> Some [commercial sex workers] encouraged buyers to use crack so buyers "would forget about sex altogether." Most of the women were habitual drug users (...77%), and...used alcohol and drugs to deaden their feelings. [As one participant explained],"It would end up that I would just drink to get drunk to cover up what I was feeling—which was dirty and ashamed." Although many U.S. women said that they used drugs and alcohol prior to entering prostitution..., it is simplistic to assume that they entered prostitution to support a drug habit. The cycle of substance abuse in which they are caught has its roots in the life history of abuse, neglect, and severe stress which all of the respondents... described when asked about prior sexual abuse before entering the sex industry. [Many had] experiences of rape, incest, being witnesses to domestic violence, losing their primary home, being runaways, having a difficult home life, and economic destitution...Much of their current substance abuse results from the accretion of abuse: sexual, physical, mental and economic prior to and within prostitution. Further, some report that prostitution worsens their drug habits, forcing them to escape longer and deeper from the consciousness of their entrapment. The worsening of drug problems ultimately traps them within prostitution, sapping them of the stamina and will to get out. (2002 197)

Women in their study (Raymond et al 2002 196-197) reported:

- "They just broke me down, shattered my will and hopes. I was humiliated."
- "They didn't push me to take drugs, they just made me an injection about 2 weeks after arriving."
- "The bosses...they used to say: 'Remember, there was a girl working for us. You should know, she is not here anymore because she did something she was not supposed to.'"

Commercial sex workers at special risk for substance abuse, violence, and AIDS are those who get caught up in the international cross-border commercial sex trade (Singer, Salaheen, & He 2004). Generally speaking, there is a strong link between migration and the geographical spread of HIV/AIDS and other infections. Studies have shown that extended or repeated overnight travel away from one's home community is associated heightened risk for HIV infection. However, in the case of commercial sex trafficking—i.e., the movement, usually of women and girls, across national boundries for use as commercial sex workers—the link is particularly strong, and its causes identifiable.

Whatever their country of origin or ultimate destination, women ensnared in the cross-border sex trade tend to come from impoverished families and the poorest regions of their home countries, have limited formal education, and to have their roots in rural areas and in subordinated ethnic minority groups within their countries of origin. These factors, demarcating the weak social resources women bring with them into the arena of commercial sex, are magnified

many times as a result of cross border commercial sex trafficking, which involves: isolation from any means of traditional social support, often having illegal status in a foreign country, often having limited linguistic or cultural skills in the new context, being trapped in some form of debt to the traffickers, having limited knowledge of HIV prevention, and possessing little ability to negotiate preventive behaviors with clients or access to medical care through their handlers or elsewhere.

In assessing the ability individuals have to protect themselves from HIV infection—measured in terms their HIV/AIDS knowledge and learned prevention skills, social position and ability to command the labor of others on their behalf, level of emotional and material social support, possession or control over material recourses including prevention materials, freedom of movement; protection from violence, and overall health status—women in the commercial sex trade are clearly at high risk. Their limited social options and resources makes them highly vulnerable to HIV infection and to disease progression. Consequently, when the AIDS epidemic in Thailand was at its peak, over 80 percent of HIV/AIDS cases in the country were attributed to commercial sex workers and clients (Viravaidya 1993). In India, infection rates among commercial sex workers in some locales such as Mumbai (Bombay) exceeds 50 percent (DevNews Media Center 2002).

Similarly high rates of STD infection have been found in migrant sex workers in Italy (Matteelli 2003). Notably in their comparative study of commercial sex trafficking in Indonesia, the Philippines, Thailand, Venezuela, and the United States, Janice Raymond and workers (2002) found that the highest rate of physical violence was against women trafficked to the United States. It is not quite clear why this is the case, but it may be a consequence of the opportunities for these women to escape from their pimps in a wealthy country with many service and feminist organizations. Under such conditions, pimps may use high doses of violence to dissuade women from seeking ouside contacts.

In our study of the relationships between violence, drug/alcohol use, and HIV risk among active drug users in the Puerto Rican community (Singer 1996; Singer et al 1999a), our research team at the Hispanic Health Council recruited 224 participants in Hartford using street outreach (to contact initial participants) and the personal networks of intial contacts to recruit subsequent participants and found that 15 percent of the individuals in our sample had ever been involved in commercial sex. Age of initiation into commercial sex ranged from 14 to 35 years of age, with a mean age of 24 years. Level of involvement in commericial varied, but about 40 percent reported they had traded sex for drugs or money many times. Almost all of these individuals (91%) reported that drug and alcohol use was part of their involvement in commercial sex. Violence in various forms (observed, attacks on friends, street fights, and personal victimization) was very common in the whole sample, with over 10 percent reported seeing street robberies almost every day while growing up while 38 percent stated that they observed fighting in the street almost every day as children. About 30 percent of participants reported that they had witnessed a murder. In this sample of Puerto Rican drug users, 16 percent had been diagnosed with HIV/AIDS, 19 percent had been diagnosed with another sexually transmitted infection, and 14 percent had been diagnosed for Hepatitis B. As these data suggest, commericial sex, violence, and various infectious disease are commonly intertwined with drug use, a finding replicated in all of our studies.

CONCLUSION

AIDS has been conceptualized in several different ways since it first gained medical and ultimately public recognition early in the 1980s. Initially, because its symptoms were so unexpected (e.g., a cancer associated with old age showing up in young men, a lung infection associated with recent surgery, especially organ transplant, and weakened immune capacity induced to avoid organ rejection being diagnosed in people who had not undergone surgery nor taken immune blocking drugs), that physicians and epidemiologists were uncertain how to conceptualize the new diease.

Before long because it appeared that all of the initial sufferers were gay men (in fact, they were not), AIDS—under the rubric of GRID (Gay Retroviral Immune Deficiency)—became the reigning conceptualization. However, the obvious spread of the diease beyond gay men soon led to a new conceptualization based on the existence of so-called

"risk groups," most notably, initially, the 4-H club (homosexuals, hemophiliacs, heroin injectors, and Haitians, although, by this point the disease had infact spread to many other groups as well).

Alternate conceptions also arose, including those with conservative religious bent (AIDS as God's punishment for sin) and those with a political foundation (AIDS as conspiracy against gays, or ethnic minorities, the primary sufferers). Eventually, as aspects of the new epidemic began to be clear, the term AIDS was introduced and the retrovirus that caused the new disease was identified. At this point, AIDS came to be conceptualized like other infectious diseases, a distinct entity with an identified pathogenic cause that could potentially be contracted by anyone engaged in a set of "risk behaviors" (ignoring the fact that many are infected by conventional behaviors like sexual intercourse with their spouse or being born to an infected mother).

From the perspective of biomedicine, each known disease is a discrete, objective, and clinically identifiable phenomenon. Normal practice in biomedicine is guided by the conceptualization of diseases as disjunctive entities that exist (in theory) separate from other diseases and from the social groups and social contexts in which they are found at any point in time. Introduction of the term syndemic, and SAVA as one example of a syndemic, was specifically intended to further refine our conceptualization, beyond conventional thinking about bounded, independent disease entities and to a realization of interlocking, mutually advancing threats to health in conducive social contexts.

With a syndemic understanding, AIDS is conceived not in isolation as a specific disease with particular properties but rather in terms of its relationship to other diseases and social conditions. In the case of SAVA, it is the relationship among HIV/AIDS, violence, and drug use that is of primary analytic concern. AIDS, drug use, and violence are conceived not as distinct "things in the world" but as phenomena in tandem, the essence of each being significantly shaped by the presence, nature and influence of the others. As argued in this paper, the actual expression of the SAVA syndemic is shaped as well by the social context, including both the population being affected and the social conditions faced by the population of concern.

As a result, it would not be inappropriate to talk about the existence of multiple SAVA epidemics, each driven by its own configuration of social conditions and relationships. This recognition points to the importance of public health responses that: 1) go beyond focusing just on HIV but instead respond to the roles of drugs and violence in undermining the effectiveness of narrowly pitched prevention initatives; and 2) being sensitive to the specific population of immediate concern and the particular expression(s) of SAVA in this population. What is called for, then, is a two directional approach involving both a broadening of focus to approach AIDS prevention/intervention in terms of a syndemic model of responding to multiple, interacting dieases as a single entity, and a narrowing of focus to match prevention/intervention to specific populations in social context. In other words, prevention efforts must be guided by a keen awareness of and response to the social, cultural, and health conditions of target populations. So too, AIDS care.

ENDNOTES

[1] We used street outreach to recruit a sample of 500 not-in-treatment heroin and/or cocaine using women over the age of 18 (average age = 37.8 years) in the greater Hartford area. The sample reflects the ethnic composition of Hartford, with 38.6% of the women being African American, 39.4% being Hispanic, and 17.4% being non-Hispanic white.

[2] Tony was a participant a NIDA-funded study by our research team at the Hispanic Health Council of relationships between substance abuse, violence, and HIV risk among not-in-treatment Puerto Rican street drug users in Hartford (NIDA #R01 DA10438) (Singer 1996; Singer, Simmons, Duke, & Broomhall 1999a; Singer, Duke, Soto, & Weeks 1999b).

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APPLYING ASPECTS OF PROBLEM BEHAVIOR THEORY TO LATINO YOUTH: THEORETICAL, METHODOLOGICAL, AND SOCIOCULTURAL CONSIDERATIONS

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ABSTRACT

Problem Behavior Theory (PBT; Jessor, Donovan, & Costa 1991) is a common and influential perspective designed to further our understanding of problem behaviors among youth. However, few scholars have directly examined the validity of PBT to use with Latino youth. The present chapter critically examines the basic tenets of PBT and its relevance to understanding problem and conventional behavioral outcomes in Latino youth. A brief overview of PBT is presented, followed by an in-depth, critical discussion of its application to research on Latino youth. Several conceptual and methodological recommendations for future research are discussed including definitional issues and relevant social, cultural, and demographic influences (e.g., peer and family influences, socioeconomic status, ethnic identity, immigration and acculturation, and gender) on problem and conventional behaviors. In addition, the links between problem and conventional behaviors are critically investigated. Consideration of these various factors will further enhance the ecological and cultural validity of Latino youth development theories and research.

INTRODUCTION

Problem behaviors (e.g., substance use, physical fighting, binge drinking, risky sex behaviors) among Latino[1] adolescents has been an ongoing concern for many practitioners and health professionals. While recent statistics indicate slight declines in the prevalence rates of problem behaviors among Latinos during the last several years, the percentage of Latino adolescents who engage in problem behaviors such as physical fighting, cocaine use, substance use (alcohol and marijuana) on school property, and teen pregnancy remain high relative to White adolescents (CDC 2002). Furthermore, Latinos represent one of the largest and fastest growing ethnic minority groups in the U.S. (U.S. Census Bureau 2001a). Hence, issues related to social development and cultural adjustment will become increasingly relevant in research and service delivery with this population. Finally, Latino youth make up an increasing percentage of the U.S. population (U.S. Department of Health and Human Services 2001). Taken together, these statistics highlight the importance of furthering researchers' and health professionals' understanding of problem behaviors in Latino youth.

There have been a number of theories that have been developed and tested that attempt to explain adolescent social behaviors (e.g., Hawkins, Catalano, & Miller 1992). However, there are several limitations in the existing literature on adolescent behaviors that are worth highlighting. First, many theoretical models on problem and conventional behaviors were formulated and tested primarily with White, middle-income populations. And second, although a number of culturally-relevant variables have been shown to be associated with risk-taking and social competence behaviors among ethnically diverse youth, many mainstream theories do not account for culturally-relevant variables. In order to enrich our theoretical understanding of problem and conventional behaviors among ethnically diverse youth, it is important that researchers closely examine existing models and arrive at alternative formulations that take into account culturally-relevant methodological and conceptual factors.

The present paper examines Problem Behavior Theory (PBT: Jessor & Jessor 1977; Jessor, Donovan, & Costa 1991) and its relevance to Latino youth. The focus of the present paper is PBT because it is one of the most widely studied conceptual and influential models in adolescent and young adult development. This paper begins with a brief overview of relevant problem behavior research with Latino adolescents. Methodological considerations in the conception of PBT, as well as culturally-relevant factors known to be linked to Latino adolescents' risk-taking behaviors are presented. Finally, implications for theory are discussed.

OVERVIEW OF PROBLEM BEHAVIOR THEORY

Problem Behavior Theory is a psychosocial model that attempts to explain behav-

ioral outcomes such as substance use, deviancy, and precocious sexual behavior among adolescents (Jessor & Jessor 1977) and young adults (Jessor et al 1991). The model includes two antecedent-background factors, and three independent, but related systems of psychosocial components. Antecedent-background variables consist of demographic factors (e.g., parental education and occupational levels, family structure), and socialization influences that encompass parental ideologies with respect to traditionality, religiosity, tolerance for deviance, home climate, and peer and media influences. The three psychosocial systems consist of personality, perceived environment, and behavior systems, each including variables that contribute to the likelihood that problem behaviors will occur.

The personality system consists of three components. The Motivational-Instigation Structure encompasses an individual's set of values and expectations regarding academic achievement, independence, and level of peer affection. The Personal Belief Structure consists of a person's social criticisms (i.e., the acceptance or rejection of society's norms, values, and practices), level of alienation from others, self-esteem, and internal/external locus of control. The third component of the personality system is the Personal Control Structure, which entails an individual's attitude and tolerance towards deviance, level of religiosity, and positive functions (e.g., drinking reduces stress and anxiety) and perceived effects of risk behaviors.

The perceived environmental system consists of distal and proximal components that reflect social influences. The distal structure is comprised of contextual social factors regarding an individual's level of parental-, familial-, or peer-orientation. In contrast, the variables in the proximal structure encompass approval or disapproval from parents, family, or peers regarding problem behavior(s).

The third component of Problem Behavior Theory, the behavior structure system, consists of problem and conventional behavioral structures that work in opposition to one another. Examples of the problem behavior structure include illicit drug use, tobacco use, alcohol abuse, deviancy, and precocious sexual behavior. Jessor and his colleagues postulate that these problem behaviors stem from an individual's affirmation of independence from parents and societal influence. In contrast, conventional behavior structures consist of behaviors oriented towards society's traditional standards of appropriate conduct such as church attendance and high academic performance. An important premise of PBT is that proneness to specific problem behaviors entails involvement in other problem behaviors and less participation in conventional behaviors (Jessor 1987). This premise is a central tenet of PBT and has important implications for research and intervention. Because of the significance of this claim, the present paper will focus on examining the validity of this tenet, especially when applied to understanding Latino youth.

CONCEPTUAL ISSUES IN PROBLEM BEHAVIORS

Definitions and Classifications

According to Jessor, problem behavior is defined as

> behavior that departs from the norms—both social and legal—of the larger society; it is behavior that is socially disapproved by the institutions of authority and tends to elicit some form of social control response whether mild reproof, social rejection, or even incarceration. (1987 332)

These behaviors include, but are not limited to, substance use (e.g., tobacco, alcohol, and illicit drugs), general deviant behaviors (e.g., vandalism, stealing), and precocious sexual intercourse.

PBT and Latinos

Relatively few studies have directly examined the generalizability of PBT in Latino youth. A few studies have examined the relations among problem behaviors and the factor structure posited by PBT in Latino youth. For example, Dinh and colleagues' (2002) study with Latino youth (primarily Mexican American youth) revealed that substance use attitudes, association with delinquent peers, externalizing problem behaviors, and gang involvement loaded on a single-factor which was descriptive of "problem behavior proneness." Furthermore, findings indicated that problem behavior proneness was stable over a one-year time period.

Although prior research has shown evidence for problem behavior proneness

among Latino youth, it has been suggested that the structure of problem behaviors may differ across ethnic groups (Barrera, Biglan, Ary, & Li 2001). Newcomb noted that,

> On the basis of the differential association observed between drug use and other types of delinquency or problem behaviors...it seems possible that this syndrome may have different patterns for various ethnic groups. (1995 126)

Indeed, prior research with Latino youth showed marijuana use loaded higher on a second factor with arrest history than on the first factor with alcohol and tobacco use (Ebin, Sneed, Morisky, Rotheram-Borus, Magnusson, & Malotte 2001). Finally, a study with Latino college students showed variations in the number of factor structures in problem and conventional behaviors across Latino subgroups, suggesting that the behavior system may operate differently across these groups (Zamboanga, Carlo, & Raffaelli 2004). On the basis of those and other empirical findings, researchers have raised questions about the generalizability of PBT to other ethnic groups (e.g., Barrera et al 2001; Mitchell & Beals 1997; Newcomb 1995; Williams, Ayers, Abbott, Hawkins, & Catalano 1996).

One area of particular concern is that the operational definition of problem behavior may be too narrow to apply to Latino groups. For example, in their follow-up work with young adults, Jessor and colleagues omitted sexual intercourse from the behavior structure system. They argued that

> with development from adolescence to young adulthood, the very same behavior—sexual intercourse—shifts from problem to normative behavior. (1991 24)

However, it should be noted that risky sexual behaviors are problematic, particularly among Latino populations (Raffaelli, Zamboanga, & Carlo 2005). For example, Latinas are more likely to engage in unprotected intercourse than women from other ethnic groups (cf. Raffaelli et al 2005). Furthermore, sexually active Latina college students are less likely to use condoms than their female counterparts from other ethnic groups (CDC 1997). Although there might be many reasons that account for frequent unsafe sexual behaviors among Latinas, careful consideration of the definition of risky-sexual behaviors in this population is imperative. Taken together, it is important to consider the definition of problem and normative behaviors in the appropriate ethnic and developmental contexts.

Another variable in the behavior structure system of PBT worth noting is general deviant behaviors. According to Jessor and colleagues (1977, 1991), general deviant behaviors are behaviors that violate social and legal norms but do not involve substance use and misuse. Jessor and Jessor (1977) measured general deviance by using a multi-item scale that assessed diverse problem behaviors such as trespassing, vandalism, lying, stealing, threatening a teacher, and skipping school without a valid excuse. Jessor and colleagues (1991) used similar items (except skipping school and threatening a teacher) and added initiating fights to measure general deviant behaviors in young adults. Such conception of general deviant behavior is consistent with a "syndrome" view of problem behaviors; however given the paucity of research on the structure of problem behaviors in Latino adolescents and young adults, it remains unclear whether this purported structure of general deviancy has functional and structural equivalence with this population.

PROBLEM BEHAVIORS IN LATINOS: SOCIAL CONSIDERATIONS

Jessor and colleagues (1991) acknowledged the limited attention given to "distal" factors (i.e., social environment) in their early formulation of PBT. They noted that such

> decision was partly influenced by the logic of causality and partly by the relative homogeneity of social background of our in-school, relatively middle-class population of youth. (1991 19)

Although Jessor and colleagues (1991) included a number of demographic variables (e.g., education, occupation, religious affiliation, and family structure) in their PBT model, there are several cultural and sociodemographic factors that are also relevant in our understanding of problem behaviors in Latino youth. The following section provides examples on the relevance of social, cultural, and demographic factors to problem behaviors such as substance use in Latino youth.

Peer Influences

Researchers have argued that one of the strongest influences on youth problem behaviors is involvement with delinquent peers (Barrera et al 2001). Consistent with prior studies in non-Latino populations, research with White, Hispanic, and American Indian adolescents revealed that association with delinquent peers was associated with involvement in general problem behaviors (substance use, poor academic performance, and antisocial behavior) (Barrera et al 2001). Research with Latino adolescents revealed strong relations between peer alcohol and peer marijuana use and adolescent drinking and marijuana use, respectively (Frauenglass, Routh, Pantin, & Mason 1997). A large-scale study with African American and Puerto Rican adolescents showed tolerance of deviance and peer modeling of substance use and deviance to be predictive of substance use and delinquency (Brook, Whiteman, Balka, & Cohen 1997). This study also examined differences in the magnitude of the relations between risk factors with substance use and delinquency; results showed that association with marijuana using peers was more strongly related to substance use than delinquent behaviors, while involvement with deviant peers had a stronger association with delinquency than substance use. In short, research findings with Latino adolescents are consistent with PBT's hypothesized influence of personality (e.g., attitudinal tolerance of deviance) and the perceived environment (peer approval and models of problem behavior) on problem behaviors in this population.

Although negative peer influences have been linked to youth problem behaviors in Latinos, family factors can influence such relations. For example, one study showed that family support moderated the relations between peer substance use (marijuana and tobacco) and adolescent substance use. In other words, as the number of substance using peers increased, higher levels of family support were related with lower levels of youth substance use (Frauenglass et al 1997). Researchers have also highlighted the impact of family conflicts on family relationships (e.g., open parent-youth communications) which in turn can lead to inadequate parental monitoring (see Barerra et al 2001). Inadequate parental monitoring increases the likelihood of youth involvement with deviant peers. Consistent with this suggestion, research with Hispanic, White, and American Indian adolescent boys and girls indicated that inadequate parental monitoring was directly and indirectly (through its effect on adolescents' association with delinquent peers) associated with problem behaviors (Barerra et al 2001).

Family Relationships

According to scholars, family plays a central role in shaping Latinos' experiences (Carlo, Carranza, & Zamboanga 2002; Fuligni, Tseng, & Lam 1999). This value is reflected in familism—the strong identification with, and attachment and loyalty to, one's family, which has also been well-documented among Latinos (e.g., Sabogal, Marin, Otero-Sabogal, Marin, & Perez-Stable 1987; Suarez-Orozco & Suarez-Orozco 1995). The quality of family and peer relationships is an important consideration in youth problem behaviors in Latino populations. While parent influences, particularly parent support and control are relevant aspects of the perceived environment system of PBT, they are considered "distal" structures in the model. Furthermore, the personality system of PBT entails values and expectations placed on independence. Traditional Latino values of familism and cultural emphasis placed on family interdependence and connectedness thus warrants further consideration with respect to health-risk behaviors among Latino youth.

Negative family relationships such as interparental conflict can threaten Latino adolescents' emotional well-being and therefore increase their risk for problem behaviors (see also research on family violence by Caetano, Field, & Nelson 2003 and literature review by Salzinger, Feldman, Stockhammer, & Hood 2002). For example, one study revealed that Latino adolescents who were exposed to parental arguments about them also reported higher levels of substance use (alcohol, tobacco, and marijuana use) and elevated sexual experience (Tschann, Flores, Marin, Pasch, Baisch, & Wibbelsman 2002). Furthermore, Tschann et al (2002) found that adolescents who were more involved in their parents' conflicts (e.g., siding with a parent) also reported higher levels of emotional distress and in turn, experienced higher levels of substance use and had more sexual experience. Hence consistent with prior research with non-Latino adolescents, inter-

parental conflict is associated with negative psychological and behavioral outcomes in Latino adolescents (Tschann et al 2002).

Positive family relationships can help protect Latino adolescents' from becoming involved in problem behaviors. Studies have shown that higher family support, strong family connectedness, and higher parental monitoring is associated with lower alcohol and substance use and less gang involvement among Latinos (e.g., Frauenglass et al 1997; Kerr, Beck, Shattuck, Kattar, & Uriburu 2003). A study with Latino adolescents revealed a significant association between positive family attitudes (i.e., familism) and lower odds for lifetime marijuana use (but only for those who possessed high or moderate knowledge of the drug) (Ramirez, Crano, Quist, Burgoon, Alvaro, & Grandpre 2004). In essence, family relationships can greatly impact Latino adolescents' development and thus warrant important consideration when theorizing about problem behaviors with this population.

PROBLEM BEHAVIORS IN LATINOS: SOCIODEMOGRAPHIC AND CULTURAL CONSIDERATIONS

Socioeconomic Status

Latinos are overrepresented in the lower socioeconomic sector in the U.S. According to the U.S. Census Bureau (2001b), 22.8 percent of Hispanics were living in poverty in 1999, compared to only 7.7 percent of non-Hispanic Whites. The number of Latino female-headed households is high and when employed, Latino women are likely to work in low-status, low-paying jobs (Padilla & Salgado de Snyder 1995). Such challenges may contribute to parental absence, reduced maternal involvement, and increased family distress. Consistent with this suggestion, research with a nationally representative sample of White, Black, and Hispanic adolescents showed that living in a single-parent home and being Latino were associated with higher levels of involvement in violence, independent of income (e.g., Blum, Beuhring, Shew, Bearinger, Sieving, & Resnik 2000; Smith & Krohn 1995). Although these studies highlight the importance of the family in preventing Latino youth risk-taking, it can be argued that the socioeconomic considerations outlined above are not unique to Latino adolescents, and that a fuller consideration of the impact of economic factors would broaden the utility of PBT for all ethnically diverse populations.

Immigration and Acculturation

Another set of factors that must be considered when theorizing about youth risk behaviors in Latinos are those associated with the dynamics of culture adaptation and change. Acculturation[2] is the process of psychological and behavioral adaptation that occurs when two cultures come into contact, as happens when immigrants arrive in a new country or one group is colonized by another (Marin & Marin 1991). Researchers have argued that

> [a]cculturation is one of the most important factors that explain risk behavior and health status of Latinos. (Suarez & Ramirez 1999 120)

Research suggests that immigration status and acculturation (commonly assessed through language use or generation status) into U.S. society play a role in youth problem behaviors in Latinos (e.g., Ebin et al 2001; see also De La Rosa 2002, and Epstein, Botvin, & Diaz 2001 for reviews). For example, compared to adolescents with two or more years of U.S. residency, foreign-born Cuban and other Hispanic adolescents who had lived in the U.S. for two years or less had the lowest overall lifetime prevalence rates of substance use (Khoury, Warheit, Zimmerman, Vega, & Gil 1996). In another study, Epstein et al's (2001) large-scale, longitudinal investigation with Latino adolescents revealed that Latino adolescents who spoke English (only or mostly) with their parents reported higher levels of marijuana use than adolescents who Spanish (only or mostly) with their parents. Moreover, one-year follow-up results showed that Latino adolescents who spoke English with their parents engaged in higher levels of polydrug use than those who spoke Spanish with their parents (Epstein et al 2001). Finally students who spoke both English and Spanish with their parents reported higher lifetime polydrug use compared to those who spoke Spanish with their parents (Epstein et al 2001). Although the majority of studies show positive relations between acculturation and substance use, it should be noted that not all studies support the contention that acculturation is associated positively with Latino adolescent

problem behaviors (e.g., Ramirez et al 2004; Zapata & Katims 1994; see De La Rosa 2002, for a review). Thus, it is clear that the association between acculturation and substance use is complex.

The majority of past acculturation and problem behavior research has focused primarily on the direct relation between these two variables (or some other outcome variable) (Dinh et al 2002); hence pathways of mediation or mechanisms that explain the link between acculturation and problem behaviors remain unclear (McQueen, Getz, & Bray 2003). Given the central role of family in Latino culture and the influence of family variables (e.g., parental monitoring and involvement, family relationships) on problem behaviors in Latino youth, the mediating influence of family factors warrants much needed attention (Dinh et al 2002). Indeed, scholars contend that children acculturate faster than their parents (McQueen et al 2003; Padilla & Salgado de Snyder 1995), and highlight Latino parents' concerns regarding their children's acculturation into mainstream American society:

> To say that parents do not get concerned about the changing family values would be to ignore a real tension that haunts immigrant parents in particular. During the preschool years, parents are able to exert a strong influence on their children. As children get older, parents fear that they will become too Americanized and forget their language and culture. (Delgado-Gaitan 1993 425)

Parental concerns may give rise to parent-child conflicts, especially if pressures to assimilate outside the home are present. Parent-child acculturation gaps are believed to give rise to problems in family communication and parent-child conflicts (Negy & Woods 1992; Szapocnik, Santisteban, Rio, Perez-Vidal, & Kurtines 1989). Such challenges can disrupt family connectedness which in turn places these youth at high risk for problem behaviors.

Additional empirical evidence has highlighted the mediating role of family and peer relationships with respect to the association between acculturation and problem behaviors. The Samaniego and Gonzales (1999) study revealed that family conflict, low maternal monitoring, inconsistent discipline, and negative peer hassles mediated the relation between acculturation (as measured by language use and generational status) and delinquency in Mexican American adolescents. In another study, Dinh et al (2002) showed that parental involvement mediated the relation between acculturation and problem behavior proneness a year later.

Gender

Differential standards and values regarding alcohol use are known to vary by gender among Hispanics. In general, women and children are typically socialized to abstain from drinking (Gilbert & Collins 1997). Flores-Ortiz's (1994) study with Latina adolescents in California noted inherent gender double standards regarding drinking among Mexican American families. The general reported consensus among the Latinas in this study was that Latino cultures condoned drinking among men but not women. Consistent with this suggestion, it is argued that gender can moderate the relation between acculturation and substance use in Latino youth and young adults. Latino youth and young adults acculturate into a U.S. culture that is less prohibitive (compared to traditional Latino cultures) about the use of alcohol by women. As such, Latinas may modify their drinking behavior by adopting more liberal attitudes and behaviors toward drinking. Conversely, Latino youth and young adults who acculturate to the U.S. are therefore less likely to undergo significant changes in their drinking because they are acculturating into a U.S. society where, much like their Latin country of origin, there are no strict cultural sanctions against drinking for males.

Research with Mexican American adolescents highlighted other gender differences with respect to the link between acculturation and problem behaviors (McQueen et al 2003). Their findings revealed that family conflict mediated the association between acculturation (as measured by language) and marijuana use and deviant behavior for males, but not females. Furthermore, generation status was unrelated to problem behaviors, family conflict, and separation for males; however for females, acculturation (as measured by generation status) was indirectly associated with substance use and deviant behaviors through its effect on family conflict and separation.

While prior research has indicated gen-

der differences in adolescent substance use, researchers have argued that gender alone has limited utility in predicting most substance use outcomes in Latino youth (Kulis, Marsiglia, & Hurdle 2003). Research with Mexican American adolescents in the Southwest revealed that gender identity (aggressive masculinity, assertive masculinity, affective femininity, and assertive femininity) was a stronger predictor of substance use than gender alone. In particular, aggressive masculinity was associated with increased risk for substance use, regardless of acculturation level. Findings also revealed that affective femininity and submissive femininity appear to have a protective effect against substance use for Mexican American adolescent boys and girls, particularly among those who are highly acculturated (Kulis et al 2003). Hence in order to make PBT more applicable to Latino adolescents, it is important that gender-identity (not just gender alone per se) and acculturation factors be considered as integral aspects of PBT's conceptual model.

CONCEPTUAL ISSUES IN CONVENTIONAL BEHAVIORS

Definitions and Classifications

Jessor and colleagues (1991) define conventional behaviors as behaviors consistent with societal and legal norms as endorsed by social institutions of authority. The most common operational definition is church attendance, although political and health behaviors are included in their conceptual model. These scholars acknowledge that their primary interest is in "proneness to behavior system." That is, ultimately, the focus is on the individual's involvement in problem behaviors relative to his or her involvement in conventional behaviors. Therefore, according to PBT scholars, youth who are engaged in problem behaviors are less likely to engage in conventional behaviors. However, this notion does not necessarily hold up conceptually nor when one considers existing empirical literature. Moreover, the emphasis on church attendance as one of the primary markers of conventionality in the behavior structure system presents conceptual and methodological challenges for researchers interested in understanding positive youth development among ethnic minorities.

Associations Between Problem and Conventional Behaviors in Latinos

According to the behavioral structure system of PBT, there is a direct relation between problem and conventional behavior such that youth can be expected to be more likely to engage in one but not both types of social behaviors. This assumption has implications for theory, methodology, and intervention programs and policy making. First, the assumption implies understanding the development of conventional or problem behaviors will lead to an understanding of the development of both types of behaviors. Second, measures that tap into either set of social behaviors will suffice in our understanding of youth development. And third, the tenet suggests that programs or policy decisions designed to address either the promotion of conventional behaviors or the reduction of problem behaviors will affect both set of behaviors. However, there are concerns that this assumption may oversimplify the challenges of understanding problem and conventional behaviors.

The complexity and challenges of understanding problem behaviors among Latinos can be exemplified by observing behaviors among gang members. Although gang members often exhibit antisocial behaviors, it is also clear that gang members frequently engage in sharing, comforting, protective and supportive behaviors, and even risk their own lives for the good of the group or for others in the group (i.e., altruistic behaviors). Those exhibited behaviors suggest that gang members are capable of prosocial (i.e., behaviors that benefit others) and socially acceptable behaviors; however, prosocial behaviors are often reserved for members of their ingroup and antisocial behaviors are often manifested towards outgroup members (including majority society).

The research evidence that supports the incongruity between antisocial and prosocial behaviors is well-documented. Youth who engage in prosocial behaviors do not automatically engage less in antisocial behaviors and vice versa. Scholars have suggested that children sometimes engage in both prosocial and antisocial behaviors in order to have greater impact on their peer group activities and to gain approval from their peers (Carlo 2006). Furthermore, empirical research on the association between prosocial and antisocial behaviors (such as aggres-

sion) often yields modest correlations (Carlo, Hausmann, Christiansen, & Randall 2003; Crick & Grotpeter 1995; Wyatt & Carlo 2002). There are some youth who engage in high levels of both antisocial and prosocial behaviors and there are other youth who engage in low levels of both sets of behaviors. The research suggests that aggression is not just the flip side of prosocial behaviors or vice versa. Thus, existing developmental research on prosocial and aggressive behaviors suggests that the relations between conventional and problem behaviors will either be nonsignificant or modest at best.

There is additional evidence on the modest and sometimes nonsignificant relations between conventional and problem behaviors. For example, a perusal of the relations between conventional and problem behaviors (a number of measures of substance and alcohol use and deviant behaviors) showed that the correlations ranged from -.13 to -.38 (mean correlation = -.24) in a sample of high school students and from -.06 to -.24 (mean correlation = -.15) in a sample of college students (Jessor et al 1991; see also Costa, Jessor, Fortenberry, & Donovan 1996). Similarly, in a sample of Latino college students, Zamboanga et al (2004) found modest relations between problem and conventional behaviors. Ebin et al (2001) yielded evidence that adaptive health behaviors were modestly (mostly nonsignificantly) associated with problem behaviors among Latino adolescents. These findings demonstrate a modest overlap between conventional and problem behaviors.

Towards a Broader Conception of Conventionality

Scholars have long noted the overemphasis on negative and risk behaviors by researchers who study ethnic minority populations (Allen & Mitchell 1998; McLoyd 1990). There have been a number of important consequences that stem from this kind of research emphasis. First, researchers have noted the lack of theories that foster our understanding of normative development among those youth. Second, some of the existing research has been characterized as reinforcing or creating deficit models—models that depict ethnic minorities as deficient relative to non-ethnic minority youth. Third, an overemphasis on negative and risky behaviors among ethnic minority populations may help to reinforce negative stereotypes, racist attitudes, and stigmatization that are already prevalent in sections of our society.

A broader and more comprehensive approach to studying problem behaviors would create opportunities to deepen our understanding of positive behavioral outcomes as well as promote our understanding of variables that could buffer negative symptomatology. Furthermore, studying a broader array of behaviors would provide an ecological valid and more balanced understanding of Latino youth development that acknowledges the strengths and complexity of these individuals. In addition, movement towards more complex models of Latino youth development would help us account for the wide individual differences in social behaviors among Latinos. Thus, there is great importance to understanding positive social development, including conventional behaviors among Latinos.

One major limitation of PBT is the somewhat narrow operational definition of conventional behaviors. Turiel (1983) and his colleagues proposed that behaviors can be divided into several categories depending upon the obligatory nature and the surrounding social norms. Conventional behaviors were defined as actions guided by prevailing informal social norms and customs. Moral behaviors are defined by formal societal laws or rules that have strong socially obligatory characteristics. Actions in the personal domain reflect individual preferences and biases with no grounding in formal societal rules or laws. Finally, prudential actions are those behaviors that subscribe to considerations of the child's safety or well-being. An additional set of behaviors is prosocial behaviors (i.e., behaviors intended to benefit others). Those latter behaviors can fit under the rubric of either conventional or moral domains (Carlo 2006). The strength of this typology is that conventional behaviors are not simply considered as a unidimensional construct. Instead, behaviors are classified accordingly to reflect the social contextual circumstances, the underlying intentions, and the consequences.

In an attempt to broaden their focus to additional conventional behaviors, Jessor, Turbin, and Costa (1998) examined the associations between several conventionality-related variables (e.g., school and parent orientation, positive relations with adults, friends

as models for conventional behaviors, prosocial activities, and church attendance) and health-related risk factors (e.g., stress, peer pressure susceptibility, parents smoking behaviors) and health enhancing behaviors (e.g., seat belt use, good dental hygiene, sleep, exercise). The researchers demonstrated that conventionality-related behaviors were positively related to health-enhancing behaviors.

Although the aforementioned study is one of the first to directly examine positive traits and behaviors from a PBT perspective, there are several issues worth noting. First, church attendance was included as a predictor rather than a criterion variable as part of the behavioral system as proposed by PBT. Second, the conceptualization of the study design was somewhat ambiguous because the conventionality-related variables were conceptualized as protective factors but scholars have noted that protective factors are variables that protect against negative symptomatology under adverse conditions (e.g., Masten & Reed 2002). The adverse conditions of the sample in the study were not established—thus, the operationalization of protective factors is subject to question. And third, although the study of protective and buffer factors is important in its own right, understanding the development of conventional behaviors requires that conventional behaviors are the focus outcome of research. Thus, there is a need to carefully distinguish between the different system levels of the structure of PBT and to consider the broad array of behaviors that fall under the rubric of conventional behaviors. The importance of these issues becomes more evident when we attempt to understand the development of conventional behaviors among Latino youth.

CONVENTIONAL BEHAVIORS IN LATINOS: SOCIAL CONSIDERATIONS

Peer Influences

Although there is a substantial body of evidence suggesting that peers influence the development of prosocial behaviors (see Carlo, Fabes, Laible, & Kupanoff 1999), research on the influence of peers on prosocial and conventional behaviors among Latinos is nonexistent to our knowledge. However, as peers become more influential with age, one might expect that peers serve as models for prosocial and conventional behaviors. Furthermore, peers provide direct and indirect social feedback (social rewards and punishers) on prosocial and conventional behaviors. Moreover, because youth constantly engage in social comparisons, peers can influence youth by providing standards and norms for social behaviors (Carlo et al 1999). The influence of peers is likely to be exacerbated or mitigated by the degree of perceived similarity or admiration for the peer or peer group.

One specific dimension along which the strength of the influence of peers might vary among Latino youth is ethnic identity. Latino youth might be more susceptible to peer influence to the degree that the youth identifies with their culture of origin and the peer group reflects the strength of that ethnic identity. Peer groups that exhibit behaviors or cultural pride that reflect closely the youth's ethnic identity may be more apt to their influence and vice versa. Furthermore, the influence of peers may also depend on the congruency between the youth's ethnic identity and his or her parents' ethnic identity. The greater the disparity, the greater the distance between parents and their youth, and in turn, this might lead to greater impact by the peer group. Although some research has been conducted on peer influence in Latino gang affiliation, research on the influence of peers on Latino youth normative development is lacking. Further research is needed to examine these processes among normative groups of Latinos.

Family Relationships

In contrast to the lack of research on the influence of peers on positive Latino youth development, there is a body of research on the influence of family on positive Latino youth development. Conceptually, parents and family members are expected to impact Latino children's development, particularly early in life. By adolescence, youth renegotiate their relationships with their parents and family members and become increasingly influenced by peers (Youniss 1980).

However, as mentioned previously, scholars have noted that close family relationships are the hallmark of many Latino families and that most Latino families foster familial interdependence (e.g., Knight, Bernal, & Carlo 1995; Raffaelli, Carlo, Carranza, & Gonzalez-Kruger Forthcoming). Furthermore, studies suggest that parents may still be influential

even in adolescence (Carlo et al 1999) and this might be particularly true among some Latinos. For example, there is some research that shows that Latinas (relative to Latinos) remain closely monitored by their parents and maintain close relationships with their parents (see Carlo et al 1999). Recently, de Guzman and Carlo (2004) showed that family adaptability was associated positively with prosocial behaviors in a sample of Latino adolescents. The finding suggests that, among Latinos, families who are flexible in responding to the youth's specific circumstances may be more adept at fostering prosocial behaviors. Given the potential challenges posed by intergenerational and intercultural value conflicts, family adaptability may become a more pressing characteristic to foster positive behavioral outcomes.

CONVENTIONAL BEHAVIORS IN LATINOS: SOCIODEMOGRAPHIC AND CULTURAL CONSIDERATIONS

Socioeconomic Status

Researchers have shown links between family economic status and maladjustment in children and adolescents (e.g., Elder & Conger 2000). According to those scholars, economic strain on the family fosters parental depression, which in turn, impedes effective parenting and leads to negative symptomatology in children. However, to our knowledge, no research has been conducted to examine whether there is a similar mechanism that impacts prosocial or conventional behaviors. Research examining the potential impact of economic strain on prosocial and conventional behaviors among Latinos is therefore needed.

There is another mechanism that would imply a strong association between SES and prosocial and conventional behaviors, especially among Latinos. As new Latinos enter the U.S., many immigrants acculturate to the majority society. However, acculturation often induces acculturative stress (i.e., taxing demands that result from adapting to the new majority society). Thus, in addition to possible economic strain from low starting household income, Latino families might experience stress resulting from discrimination, prejudice, or harassment experiences. Therefore, for new immigrants, there might be strong correlations between SES, acculturation, and acculturative stress. Any negative consequences that result from acculturative stress might have detrimental impact on prosocial and conventional behaviors in Latino youth. One might discover strong associations between SES and prosocial and conventional behaviors as a result of the strong association between acculturative stress and prosocial and conventional behaviors and the association between SES and acculturation.

Consistent with expectations, there is evidence that more acculturated Latinos are less cooperative and prosocial and less acculturated individuals are more competitive (de Guzman & Carlo 2004; Knight & Kagan 1977). However, to our knowledge, there is no research that examines associations among acculturative stress, SES, and prosocial and conventional behaviors. Clearly, more research is needed to examine those possibilities.

Gender

According to gender socialization theorists (Gilligan 1982; Maccoby & Jacklin 1974), girls are socialized differently than boys and this has important implications for the development of conventional and prosocial behaviors. For example, girls are encouraged to express sadness more than boys, which is associated with prosocial responding. Furthermore, in many societies, girls are assigned to caring and nurturing responsibilities and expected to fulfill those duties more than boys (see Carlo et al 1999). Indeed, prosocial and conventional behaviors (e.g., comforting, caring) are perceived as more consistent with girls' gender role than boys' gender role (Eisenberg & Fabes 1998). Particularly among Latino families, gender typed expectations are strong. Although there is little or no research that focuses on Latinos, scholars have noted that Latinas are probably more strongly encouraged to fulfill family and household responsibilities (including caring and nurturing siblings) than boys (Knight et al 1995). Other scholars have noted parental expectations for Latino boys to express strong masculine-typed traits and behaviors. Taken together, those practices and expectations foster greater likelihood of prosocial and conventional behaviors in Latino girls rather than Latino boys.

There is considerable empirical evidence that girls exhibit higher levels of prosocial behaviors than boys, especially during adolescence (e.g., Carlo 2006). During late ado-

lescence and young adulthood, however, scholars have found that boys do express higher levels of instrumental and risky prosocial behaviors than girls; whereas, girls express higher levels of nurturing and caring prosocial behaviors than boys (Eagly & Crowley 1986). Unfortunately, to our knowledge, studies that directly examine gender differences in prosocial and conventional behaviors among Latino youth are lacking.

SUMMARY AND CONCLUSIONS

Taken together, research on problem and conventional behaviors among Latino samples suggest a more differentiated behavior system than that which is proposed by PBT scholars. The conceptual and methodological limitations of PBT highlighted in this paper have important implications for the development of valid measurement tools. The existing research suggests that further assessment of the psychometric properties of measures to use with Latinos is necessary. These issues, if not properly addressed, could create stigmatization and rejection towards Latinos if inadequate measures present Latinos as problematic or "prone" to problem behaviors. Finally, the study of problem and conventional behaviors in Latinos requires careful consideration of peer, family, sociodemographic, gender, and culture-relevant (e.g., acculturation, ethnic identity) variables. Although such research increases the complexity of existing theory and methodology, the resulting empirical research will more adequately reflect the multidimensional nature of Latino youth development.

ENDNOTES

1 The term "Latino/a" are used in this paper to refer to persons of Mexican, Puerto Rican, Cuban, or other Central and South American, and/or other Spanish origin with the understanding that there are cultural differences between Latino subgroups. We also used the terms Latino and Hispanic interchangeably in the text of the manuscript.

2 Scholars have debated the complexities surrounding acculturation as well as appropriate ways to measure it (e.g., language use, generation status, ethnic identity, ethnic loyalty and awareness) in Latino populations. The theoretical significance surrounding these measurement debates cannot be overemphasized, but because they are beyond the scope of this paper, readers are directed to other sources (e.g., Berry 2002; Negy & Woods 1992) for in-depth information about acculturation.

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RUNAWAY YOUTH ADMITTED TO JUVENILE DETENTION: FACTORS ASSOCIATED WITH CIGARETTE, ALCOHOL, AND MARIJUANA USE

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ABSTRACT

The high rates of substance use among American adolescents are challenging, especially among runaway youth who are often identified as delinquent and find themselves in juvenile detention centers. Current services offered by juvenile detention centers focus on offering safe, short-term residential care; however, substance use issues are common among these youth. Although providing substance use treatment is an unlikely addition to these juvenile justice agencies, the authors posit that these facilities are in a prime position to facilitate screening, assessment, and referral. Addressing issues of substance abuse among runaway youth admitted to juvenile detention must be a major objective for prevention and treatment for this high-risk population. Although interventions that address substance use among runaway, delinquent youth are limited, future research must implement and evaluate early intervention strategies aimed at addressing the complex and multifaceted challenges experienced by these youth.

ADOLESCENT SUBSTANCE ABUSE

The rates of substance use and abuse among American high school students are the highest in the industrialized world (Bachman, Wallace, O'Malley, Johnston, Kurth, & Neighbors 1991). Results from the National Survey on Drug Use and Health (NSDUH) (SAMHSA 2002) indicate that among youth 12 to 17 years of age, 33.3 percent have smoked cigarettes, 43.4 percent drank alcohol, 20.6 percent have used marijuana, and 11.6 percent have used illicit drugs during their lifetime. Between 1997 and 2002, illicit drug use among youth 12-13 years old increased from 2.2 percent to 4.2 percent (SAMHSA 2002). Although lifetime illicit drug use has been on the increase, cigarette smoking significantly declined from 2001 to 2002, down from 37.3 percent to 33.3 percent (Johnston, O'Malley, & Bachman 2003).

Although rates of substance use are significant in general youth populations, the pervasiveness of substance abuse is higher among youth that also engage in other high-risk behaviors. Adolescents who abuse alcohol or drugs frequently perform poorly in school, have been abused or neglected, and suffer from co-morbid psychiatric conditions, especially depression and suicidality (Hawkins, Catalano, & Miller 1992; Leslie, Stein, & Rotheram-Borus 2002; Rahdert & Czechowicz 1995). These youth often engage in high-risk behaviors, such as illegal activity, homelessness, risky sexual behavior, and school truancy (Kipke, Unger, Palmer, & Edgington 1996; Smyth & Saulnier 1996; Winters 1999). One group of youth at greater risk for substance use and other high-risk behaviors are youth who have run away (Kipke, Palmer, LaFrance, & O'Connor, 1997; Whitbeck, Hoyt, & Bao 2000).

Runaway/Homeless Youth

Runaway youth have been defined as those who stay away from home at least overnight without the permission of a parent or guardian; they often live in unsupervised conditions and are in need of basic services, such as food and shelter (Farrow, Deisher, Brown, Kulig, & Kipke 1992). Between 310,000 and 1.6 million youth in the United States become homeless each year due to running away or being forced to leave their homes (Finkelhor 1995; Greene & Ringwalt 1997); one in seven adolescents run away (News and Research 2003). Runaway behavior implies a failure in the family relational system (Whitbeck, Hoyt, & Ackley 1997b) and runaway youth often describe family situations characterized by disorganization, ineffective parenting behavior (including substance abuse by parents), violence, neglect, and physical and/or sexual abuse (Kipke et al 1996; Ringwalt, Greene, & Robertson 1998). When compared with parents of non-runaway adolescent's, runaway youths' parents score lower on parental warmth, supportiveness and monitoring, and higher on parental rejection (Whitbeck, Hoyt, & Ackley 1997a). Poor family environments, inconsistent family practices, and adolescent-parent conflict have been shown to increase the

child's risk for drug abuse (Hawkins et al 1992).

Substance Use Among Runaway Youth

Although research has documented the particularly high risk for drug use during adolescence, runaway/homeless youth have even greater risk for substance use. Rates of alcohol and other drug use are substantially higher among runaways than their non-runaway counterparts (Greene et al 1997; Kipke, Montgomery, Simon, & Iverson 1997). Recent national estimates of alcohol or drug use among runaway youths reveal more than 90 percent of youth utilizing runaway shelters report using substances during their lifetime and 77 percent report using during the three months prior to running away (Thompson, Pollio, Constantine, Reid, & Nebbitt 2002). Alarmingly, as many as 40 percent of runaway and homeless youth have used intravenous drugs (Pennbridge, Freese, & MacKenzie 1992). Results of a study that compared runaway and non-runaway youth showed that runaways are three times more likely to use marijuana (43% vs 15%), seven times more likely to use crack/cocaine (19% vs 2.6%), five times more likely to use hallucinogens (14% vs. 3.3%), and four times more likely to use heroin (3% vs .7%) than their non-runaway counterparts (Forst 1994).

The substances predominately used by runaway youth are cigarettes, alcohol, and marijuana. In the general adolescent population, 32 percent of twelfth grade students smoke cigarettes (National Institutes of Health Report 2002). However, one study determined that 37 percent of runaway youth smoked cigarettes regularly compared to only 6.3 percent of adolescents in high school; runaway youth also smoked more heavily (Ensign & Santelli 1998). Similarly, prevalence rates for alcohol use among runaway youth are extremely high. For example, a study of runaway/homeless youth in the Midwest found that 75 percent drank beer and 66 percent reported drinking hard liquor (Whitbeck et al 1997b). Marijuana use is also consistently higher among runaway youth than their non-runaway counterparts — 31 percent vs. 23 percent (Sherman 1992) and 54 percent vs. 24 percent (Cohen, MacKenzie, & Yates 1991). Adolescents that are homeless are more likely to have tried marijuana (43.1%) than non-runaway peers (11.0%) (Ensign & Santelli 1998).

Table 1: Sample Characteristics

Youth Characteristics	N=121 n	%
Gender		
Male	53	43.8
Female	68	56.2
Ethnicity		
European American	45	37.3
African American	49	40.5
Hispanic/Latino	6	5.0
American Indian	5	4.1
Asian	0	0.0
Other	16	13.2
Last grade completed		
6th grade	2	1.7
7th to 8th grade	44	36.3
9th to 10th grade	70	57.8
11th to 12th grade	5	4.1
Living situation at admission		
With Parent(s)	41	33.9
Other adult/friend	6	5.0
Foster care	5	4.1
Institution	6	5.0
On the Street/shelter	63	52.1
Cigarette use (ever)	86	71.1
Alcohol use (ever)	78	64.5
Marijuana use (ever)	82	67.8
	Mean	**SD**
Youth's age	14.6	1.0
Total times ran away	4.9	9.8
Cigarette use (days/month)	16.5	13.0
Alcohol use (days/month)	6.1	9.4
Marijuana use (days/month)	9.8	11.9

Although high rates of substance use is found among runaway youth is clear, crisis services designed to meet the needs of these youth can seldom provide appropriate treatment for these problems. One service sector that deals extensively with runaway youth is county detention centers. These facilities are frequently utilized by families, courts, and police departments as short-term residential housing for runaway youth with non-criminal behaviors. As the major focus of detention centers is locating suitable long-term housing for these youth, identification of substance use issues is limited. However, these facilities are in a unique position to address the needs of youth by focusing service provision efforts on substance-related issues. To provide a more complete picture of substance use among runaway youth admitted into juvenile detention, the following research questions were posed: 1) What are the demographic and individual characteristics of runaway youth using admitted to a juvenile detention center, 2) what demographic, individual characteristics and family factors pre-

Table 2: Correlations Between Independent Variables and Cigarette, Alcohol, and Marijuana Use and Number of Days Used

Independent	Cigarettes		Alcohol		Marijuana	
Variables	Ever	Days	Ever	Days	Ever	Days
Gender	-.16	.18	.04	.27*	.06	.21
Age	.14	.28**	.22**	.33**	.18*	.31**
European American	.38*	.26*	.25**	.12	.11	.10
Grade in school	.10	.34**	.19*	.21	.13	.19
Total runaway episodes	.06	.12	.05	.31**	.07	.17
Lived with parent at admission	.03	.27**	-.02	.20	.03	.03
Combined sex and alcohol	.19*	.05	.32**	.37**	.34**	.33**
Worry about family relationships	.16	.25*	.17	.23*	.15	.26*
Ever smoked cigarettes	—	—	.55**	-.08	.48**	.11
Days smoked cigarettes past month	—	—	.18	.44**	.09	.48**
Ever drank alcohol	.55**	.18	—	—	.54**	.10
Days drank alcohol past month	-.08	.44**	—	—	.15	.58**
Ever smoked marijuana	.48**	.09	.54**	.15	—	—
Days smoked marijuana past month	.11	.47**	.10	.58**	—	—

*p < .05; **p < .01

dict cigarette, alcohol, and marijuana use among this group of runaway youth and 3) what factors predict these youths' level of cigarette, alcohol, and marijuana use?

METHODS

Sample and Procedures

Between May and August 2001, consecutive entrants to a juvenile detention center in a mid-sized urban city in Western New York were recruited for participation in the study. Participants were typically admitted to the county detention center due to a mandate by family court. This facility was similar to other juvenile detention centers as they provided residential and custodial care for youth 11-18 years of age who had committed a criminal offense or had been admitted due to non-criminal behaviors, such as delinquency or running away (Dembo, Williams, Fagan, & Schmeidler 1993). Youth participants were recruited from the detention center if they were between the ages of 11-17 years, admitted to the non-criminal juvenile offenders unit, and reported a runaway episode during the previous six months. Nearly half of the youth were admitted for a 'status offense', typically running away.

Parents of these youth had given temporary custodial rights to the detention center to act as their child's guardian; thus, the center provided consent to seek participation of the individual adolescent into the study. Of the 171 youth that entered the detention center during the study period, 121 met inclusion criteria (admitted for non-criminal behavior and had runaway) and agreed to participate. A Masters in Social Work graduate student explained issues of confidentiality and voluntary participation to the youth and requested signed assent forms before they were engaged in semi-structured interviews and standardized survey measures.

Measures

The dependent variables used in the analysis included: ever used cigarettes, alcohol or marijuana (coded 'ever used' = 1, 'never used' = 0) and the frequency of substance use as measured by how may days during the past month the adolescent had used cigarettes, alcohol, or marijuana. Independent variables included demographic and individual characteristics of youth and their families. Demographic and individual categorical variables included gender ('male' = 1, 'female' = 2), ethnicity ('European American' = 1, 'African American' = 2, 'Hispanic/Latino' = 3, 'American Indian' = 4, 'Asian' = 5, and 'other' = 6), last grade completed (6th through 12th grade), and the last living situation before admission to the detention center ('with parent(s)' = 1, 'with another adult, friend, or relative' = 2, 'in foster care' = 3, 'in an institution, such as another residential facility' = 4, 'on the street or in a temporary shelter' = 5). Continuous variables included: age, total number of runaway episodes, and number of times the youth participant combined sex and alcohol use in past month.

Family characteristics were evaluated using the Family Functioning Scale (FFS) (Tavitian, Lubiner, Green, Grebstein, & Velicer 1987). The FFS consists of 40 items that measure five dimensions of family functioning: positive family affect (i.e. "People in my

Table 3: Logistic Regression Models of Cigarette, Alcohol, and Marijuana Use/Non-use Among Runaway Youth Utilizing Juvenile Detention Center Services

Predictor Characteristics	B	(SE)	OR	
Cigarette Use				
Ethnicity (European Am.)	2.85	(.88)**	17.30	Model:
Age (years)	-2.11	(.26)	0.73	X squared (5) = 45.95
Used alcohol (ever)	1.43	(.63)*	4.16	p < .001
Used marijuana (ever)	1.86	(.71)**	6.42	Cox & Snell R2 .34
Frequency of alcohol & sex	0.02	(.25)	1.02	
Alcohol Use				
Ethnicity (European Am.)	0.67	(.63)	1.96	Model:
Age (years)	0.11	(.26)	1.18	X squared (5) = 46.08
Used alcohol (ever)	1.50	(.63)**	4.48	p < .001
Used marijuana (ever)	1.91	(.61)**	6.75	Cox & Snell R2 .34
Frequency of alcohol & sex	0.44	(.27)	1.55	
Marijuana Use				
Ethnicity (European Am.)	-1.20	(.70)*	0.30	Model:
Age (years)	0.13	(.27)	1.14	X squared (5) = 46.34
Used alcohol (ever)	1.86	(.69)**	6.41	p < .001
Used marijuana (ever)	1.87	(.60)**	6.50	Cox & Snell R2 .34
Frequency of alcohol & sex	0.96	(.45)*	2.62	

family listen when I speak"), rituals (i.e. "We pay attention to traditions in my family"), worries (i.e. "I worry when I disagree with the opinions of other family members"), conflicts (i.e. "People in my family yell at each other"), and communication (i.e. "When I have questions about personal relationships, I talk with my family member"). Respondents' rate items on a seven-point scale (1 = 'never' to 7 = 'always') and items are summed for the five subscales and a total score. Internal consistency reliability ranged from alpha = .90 for positive family affect to alpha = .74 for family conflict (Tavitian et al 1987).

Method of Analysis

Descriptive analyses were followed by bivariate correlations to test for significant associations between independent and dependent variables. A power analysis was also conducted to determine whether the sample size was sufficient to conduct multivariate analyses (Faul & Erdfelder 1992). Given F2 = .25, alpha = .05, and 6 predictor variables in a model, power to detect an effect was 99 percent; therefore, maximum likelihood logistic regression analyses were used to test predictor variables (youth and family characteristics) on three dependent variables (cigarette, alcohol and marijuana use). Nominal-level predictor variables with more than two categories were transformed and assigned reference categories (e.g. last living situation reference category: 'parent's home'= 1, 'elsewhere' = 0). Categorical variables yield odds ratios (ORs) that reflect the likelihood of a positive response relative to a defined reference category, after controlling for all the other effects included in the model. Finally, OLS regression models were calculated to evaluate predictors of the level of cigarette, alcohol and marijuana use (number of days used).

Results

Analysis of the sample of adolescents in this study (see Table 1) revealed that 68 (56.2%) were female and averaged 14.6 (SD ± 1.0) years of age; most were in ninth and tenth grade (57.8%). Youths' self-reported ethnicity indicated that most were African American (40.5%) or European American (37.3%). Remarkably, the majority had been living on the streets or in a temporary shelter before admission to the facility (52.1%); however, a large proportion reported living with their parent(s) (33.9%). These youth had an average of five (SD ± 9.8) runaway episodes. Among youth participants, 71.1 percent reported smoking cigarettes, 64.5 percent drank alcohol, and 67.8 percent used marijuana. Among those using substances, youth reported smoking an average of sixteen days (SD ± 13.0), used alcohol six days (SD ± 94), and used marijuana nearly ten days (SD ± 11.9) in the previous month.

Bivariate correlations were conducted to test for significant relationships between the

Table 4: Regression Models To Predict Level of Cigarette, Alcohol, and Marijuana Use Among Runaway Youth Using Substances During Previous 30 Days

	DV = Days of Cigarette Use			
Predictor	**B**	**(SE)**	**p value**	
Constant	-42.39	(20.92)	.05	Model:
Ethnicity	5.49	(2.80)	.05	F (5,73) = 4.01,
Number of runaway episodes	0.10	(0.12)	.37	p < .001
Age	2.90	(1.39)	.04	R squared .21
Gender	2.99	(2.82)	.29	
Worry about family relationships	0.31	(0.15)	.03	
	DV = Days of Alcohol Use			
Predictor	**B**	**(SE)**	**p value**	
Constant	-52.31	(16.28)	.002	Model:
Ethnicity	1.66	(2.25)	.46	F (5,63) = 5.53,
Number of runaway episodes	0.20	(0.09)	.02	p < .001
Age	3.08	(1.07)	.006	R squared .30
Gender	5.17	(2.25)	.02	
Worry about family relationships	0.15	(0.11)	.18	
	DV = Days of Marijuana Use			
Predictor	**B**	**(SE)**	**p value**	
Constant	-53.38	(19.69)	.008	Model:
Ethnicity	1.27	(2.67)	.64	F (5,71) = 3.57,
Number of runaway episodes	0.12	(0.11)	.27	p < .001
Age	3.34	(1.32)	.01	R squared .20
Gender	3.82	(2.62)	.15	
Worry about family relationships	0.23	(0.13)	.05	

independent and dependent variables (see Table 2). Age was a significant predictor of every dependent variable, except lifetime use of cigarettes. Being European American was significantly associated with smoking cigarettes and ever drinking alcohol and combining sex and alcohol was associated with dependent variables measuring alcohol and marijuana use and level of use. Finally, many of the dependent variables (ever used substance and number of days used in previous month) were significantly related to each other.

Predictors of Use

Cigarettes: As shown in Table 3, predictors of cigarette use among the juvenile detainees revealed that being European American increased the odds of smoking cigarettes more than seventeen times (OR = 17.30) over that of other ethnic groups. Also, those who reported ever drinking alcohol were nearly four times more likely to smoke (OR = 4.16) than those not reporting alcohol use, and those who smoked marijuana were more than six times more likely to smoke cigarettes (OR = 6.4) than those who did not report using marijuana.

Alcohol: Youth that reported using marijuana were significantly more likely to use alcohol than those who did not report marijuana use. Using marijuana increased the odds of using alcohol seven times (OR = 6.75). Smoking cigarettes also increased the likelihood of alcohol use by nearly five times (OR = 4.48).

Marijuana: The final model to predict youths' marijuana use showed that being a European American adolescent decreased the odds of marijuana use by 60 percent (OR = .30). Greater frequency of combining sexual activity and alcohol use nearly tripled the odds of marijuana use among youth in the detention center (OR = 2.62). Drinking alcohol also increased the odds of using marijuana; those who reported drinking alcohol were more than six times (OR = 6.41) more likely to use marijuana; those who have ever smoked were also six times more likely to use marijuana (OR = 6.50).

Predictors for Level of Substance Use

Cigarettes: As shown in Table 4, being European American, older, and being worried about family relationships predicted greater cigarette use as measured by the number of days the youth smoked in the previous month ($F(5, 73) = 4.01$, $p < .01$). This model accounted for 21 percent of the variance in cigarette use among those who reported smoking cigarettes in the month prior to interview.

Alcohol: Predictors of the level of alcohol use among detained youth included a great-

er number of runaway episodes, being older, and female ($F(5,63) = 5.53$, $p < .001$). This model accounted for 30 percent of the variance in alcohol use.

Marijuana: Predictors for level of marijuana use among youth in juvenile detention included being older and reporting being worried about family relationships ($F(5,71) = 3.57$, $p < .001$). This model accounted for 20 percent of the variance in marijuana use.

Discussion

This study aimed to understand the risk factors in cigarette, alcohol, and marijuana use in youth admitted to juvenile detention for non-criminal behaviors. Findings showed that runaway youth admitted to juvenile detention services have significantly higher levels of substance use than national estimates of adolescent populations (Johnston et al 2003; SAMHSA 2002). Participants in this study reported greater use of alcohol (64.5%) and marijuana (67.8%) than those identified in another study of non-runaway youth that showed that 29 percent of eighth and tenth graders have used marijuana, 39.4 percent have smoked cigarettes, and 57 percent drank alcohol (Johnston et al 2003). These findings confirm the magnitude of substance use problems among runaway youth in general, but reveal greater prevalence among youth who have been admitted to juvenile detention services.

The unique characteristics of juvenile detainees, such as multiple runaway episodes and more than half living on the street at the time of admission, suggest they likely engaged in a variety of high-risk behaviors. As others have found strong correlations between drug use and crime in samples of youth entering the juvenile justice system (Dembo et al 1993), it is likely that these youth also engaged in criminal activity, as well as substance use. Living on the street also requires survival skills necessary to cope with their often traumatic lifestyle. As alcohol and marijuana have more of an anesthetizing affect than do cigarettes, these substances may be used to deal with abusive situations, feelings of detachment from others, and mental health symptoms (McMorris, Tyler, Whitbeck, & Hoyt 2002; Whitbeck et al 2000). Thus, the high occurrence of alcohol and marijuana use among youth admitted to juvenile detention may reflect one high-risk, problem behavior among many others experienced by these adolescents.

The strongest predictor of alcohol and marijuana use among this sample of detained adolescents was use of other substances. Previous research has confirmed that use of one type of drug often progresses to use of other drugs (Golub, Labouvie, & Johnson 2000; Kandel,Yamaguchi, & Chen 1992). These studies found that illicit drug use among young men aged 15 to 25 was dependent on prior use of alcohol; among young women either cigarettes or alcohol was a sufficient condition for progression to marijuana (Kandel et al 1992). Others found that age of onset and frequency of use at a lower stage of drug use were strong predictors of further progression (Golub et al 2000). These studies support the findings of this study that use of one substance is often associated with use of other substances as well.

Ethnicity was significantly associated with cigarette and alcohol use in this sample of runaway youth admitted to juvenile detention center services. This study confirmed previous findings that being European American is a risk factor that increases the likelihood for smoking cigarettes and drinking alcohol. Feiglman & Lee (1995) found fewer African American youth smoke cigarettes when compared to European American teens, despite a greater percentage of African American adults who smoke. One area of difference between European American and minority teens may be the influences that initiate the behavior. Some note that minority teens seem to be more influenced by family members who use cigarettes and European American teens are more influenced by their substance using peers (Parker, Sussman, Crippens, & Scholl 1996). European American youth are also more likely to drink alcohol than are minority youth. According to Bachman et al (1991), drinking among most minority high school seniors is less than for their white counterparts. Some have posited that alcohol use among African American youth is determined by family attitudes and social support (Epstein, Botvin, Diaz, & Schinke 1995) and the perceived expectations from their families that preclude drinking alcohol.

Familial factors also predicted the level of cigarette and marijuana use among these runaway youth. Others have reported that risk factors for youth substance use include poor parenting practices, family stress, and child

victimization (Weinberg, Rahdert, Colliver, & Glantz 1998). In addition, the stressors high-risk families face may prevent their ability to deal with conflict (Pelton & Forehand 2001). However, in this study youth who worried about family relationships used substances more than other detained, runaway youth; issues of conflict and poor communication were not significant. Children are sensitive to family dynamics; thus, increased worry about poor family relationships and their inability to change the family environment may lead them to use substances to escape their problems and worries. Being worried about family relationships may be an indicator that poor communication and conflict are the underlying causes of this concern. Further research is needed to understand the pathways through which family conflict and disorganization might be indicative of adolescents' perceptions of family relationships and the association with substance use and runaway behaviors (Johnson, Bryant, Collins, Noe, Strader, & Berbaum 1998).

Recognizing the inherent limitations of cross-sectional and self-repot data, the findings of this study must be viewed as suggestive rather than conclusive. Because the sample size is relatively small, generalizing the results to other runaway youth must be made with caution. However, the power analysis suggested that there was sufficient power to detect effects in the multivariate models. In addition, it is likely that youth under-reported their level of substance use and other high-risk behaviors, making these behaviors even more problematic than study results demonstrate. Sensitive assessment of substance use issues during admission to a juvenile detention facility is an obvious requirement for appropriate service provision and further understanding of the challenges experienced by these youth. Additional research is needed to determine the extent to which the predictor variables in this study could be replicated by more rigorous methodological strategies.

This study provides new information useful to service providers and policy makers concerning the substance use of runaway youth admitted into juvenile detention. It is clear that intervention efforts are needed to address substance use for these high-risk runaway youth. Although the current services offered by juvenile detention centers must continue to focus on offering safe, short-term residential care, substance use issues must be acknowledged. Providing substance use treatment is an immense challenge for these agencies; however, they are in a prime position to facilitate screening, assessment, and referral (Thornberry, Tolnay, Flanagan, & Glynn 1991).

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KEY RISK AND PROTECTIVE FACTORS AMONG MULTI-ETHNIC, ELEMENTARY AGED CHILDREN: FINDINGS FROM NEW MEXICO'S BEHAVIORAL HEALTH SERVICES PREVENTION BUREAU

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INTRODUCTION

More than at any time in recent history, many young school aged children are confronted with a multiplicity of factors that increase their risk for behavioral problems such as school failure, tobacco and other drug use. Elementary aged youth face increased social pressures prompted by video and media (TV) where peer conformity and materialism are highly endorsed and valued by American society. In addition, the changing nature of the family system, inadequate and ineffectual parenting skills, and in some cases economic hardship in single-parent headed homes, further exacerbate the risks that young children are expose to. Further, multi-ethnic youth, including Native American children also face a variety of cultural based risk factors such as acculturation stress (Cervantes & Ortiz 2003), perceived discrimination, and other forms of conflict with majority culture youth.

Elementary aged youth in America includes over 72,293,812 children. Of this total, 5,274,343 children are living in high-poverty neighborhoods. Children who live in census tracts where 20 percent or more of the population is below poverty are classified as "high poverty" neighborhoods. Based on this criteria about 7.4 percent nationally live in high poverty neighborhoods. In comparison, a higher percentage of New Mexico youth reside in these high poverty neighborhoods. New Mexico leads the nation in childhood poverty. Of the 508,574 of New Mexico's youth, 10.7 percent are living in high-risk poverty neighborhoods (US Census 2003). The New Mexico median income in year 2000 was $39,425, as compared to $50,046 nationally, and 14 percent of New Mexico's families are food insecure, with 9.2 percent nationally (New Mexico Voices for Children 2003).

According to the 2000 U.S. Census, the total New Mexico population is 1,819,046. Twenty-eight percent of the population is under 18 years of age, with 7 percent of the total under the age of 5 years. Forty-two percent of the population is Hispanic, 45 percent Anglo, 10 percent Native American, and 2 percent African American. The average household size in New Mexico is 2.63 persons, with 3.18 persons per family (New Mexico Voices for Children 2003; New Mexico Kids Count Data Book 2002).

Based on a number of other youth indicators, many children in New Mexico lag behind other elementary-aged youth nationally. For example, 10.2 percent of the children ages 5 to 17 have "difficulty speaking English", while the national average is at 6.6 percent (US Census 2000). Twenty six percent (135,428) of New Mexico's youth are living in single-parent households, compared to 23.3 percent of America's youth. Twelve percent (13,665) of New Mexico youth are high school dropouts, compared to 9.8 percent nationally. Six percent (18,374) are living with one or more disabilities, compared with 5.8 percent nationally. New Mexico's 2000 census data show that in fiscal year 2001, there were 62,025 juvenile offenses reported, and 30,032 referrals (6% of the juvenile population) to the juvenile justice system. In New Mexico's public schools, 56 percent of the students qualify for the free or reduced cost lunch program. In the area of prenatal care, in 2000, 12.9 percent of mothers received little or no prenatal care (New Mexico Voices for Children 2003 32).

Data reported on the New Mexico Youth Risk and Resiliency (administered statewide in the public schools by the Departments of Education and Health) for high school students reflect that 50.1 percent report having at least one drink on at least one day during the past thirty days; 35.2 percent report having at least one drink on two to five days during the past thirty days (binge drinking); 30.2 percent report having five or more drinks of alcohol within a couple of hours at least once during the past thirty days; 27 percent report smoking cigarettes during the past

thirty days. Thirty percent reported using marijuana at least once during the past thirty days, with 9 percent reporting marijuana usage on school property during the past thirty days (New Mexico Voices for Children 2003 32).

New Mexico's youth are exposed to and affected by substantial risk factors and problem behaviors in their communities and in the state as a whole, brought about by poverty, lack of hope in the future, and an educational system that does not provide sufficient social structures or bonding with positive adults and their community. By the 4th grade, 49 percent of children in New Mexico score below the basic math level, compared with 33 percent nationally (The Annie E. Casey Foundation, Kids Count Data 2002 120). These data highlight the importance of developing systems for identifying youth who experience multiple risks such that early interventions and drug prevention programs can be effectively implemented in the state of New Mexico.

In addition to the above, Native American youth in New Mexico may represent a particularly high-risk population. For example, New Mexico Kids Count Data 2002 shows that 64,953 Native American children under the age of 18 who live in New Mexico's pueblos and reservations are living in extreme high poverty neighborhoods. Close to 30 percent live in single-family households, with 15 percent linguistically isolated. There is a 20 percent high school dropout rate, and nearly 7 percent live with at least one disability, which is defined as a long-lasting physical, mental, or emotional condition determined for non-institutionalized persons aged 5 and over (Kids Count Census Data 2000).

Substance Abuse Prevention for Young Children

The field of Substance Abuse Prevention has made significant advances over the past decade. Scientifically based prevention efforts have resulted in a number of programs that reduce risks and improve resiliency among youth who are prone to drug use and abuse. The Center for Substance Abuse Prevention along with other researchers (Hawkins, Catalano, & Miller 1992) have promoted a Web of Influence frame work for understanding the causes and correlates of substance abuse and this model has been equally important in designing prevention programs. This framework emphasizes the importance of specific risk and protective factors within the domains of the individual, family, peer group, school, and community. The SAMSHA Center for Substance Abuse Prevention has now articulated and tested prevention interventions that are in many cases life domain specific. While efforts are impressive, most of this prevention research work has focused on youth in the 12-17 age group. Very few studies exist on either the assessment of risk and protective factors among younger school age children (K-6th grade) or on specific clinical trails that test the efficacy of prevention programming for younger children.

Recent advances have been made, for example, Gensheimer, Roosa, and Ayers (1990) examine strategies for recruiting school aged youth into a school based prevention program. Among 4th thru 6th graders exposed to a film about parental alcoholism, self-selected children tended to score higher on emotional and behavioral symptoms. In another study, family risk in the form of parental alcohol dependence was found to greatly increase a number of behavior and emotional risk factors in elementary aged children (Dawson 1992).

With respect to the research on drug prevention programming, a number of studies have focused on younger elementary aged children. Werch and colleagues (2003) tested an alcohol prevention program, STARS, for reducing alcohol risk. In that study, students receiving the intervention had significantly less intentions to use alcohol in the future and less alcohol quantity. Dielman, Shope, Leech, and Butchart (1989) tested a social skills/peer resistance curriculum for alcohol misuse. Among 5th and 6th grade participants results indicated the intervention was effective in reducing the rate of increase of alcohol use and misuse among grade six students who entered the study with prior unsupervised as well as supervised alcohol use. In one study related to peer pressure among elementary school youth, Dielman and colleagues (1992) found that prevention programs had a differential effect to susceptibility of peer pressure depending on the participants previous experience with alcohol experimentation.

Shope, Copeland, Marcoux, and Kamp (1996) tested the Michigan Model for Comprehensive School Health Education among 5th thru 8th grade students. Following these

youth across the three-year span, at the end of grade seven, program students' rates of substance use had increased significantly less and knowledge of alcohol pressures, effects, and skills to resist had increased significantly more than those of comparison students. Another promising approach for ethnic youth, R.E.A.L. curriculum serves 7th grade students and is currently in the process of being tested for positive program effects (Gosin, Marsiglia, & Hecht 2003). One interesting tobacco prevention program was assessed among American Indian Youth in New Mexico. This school based cancer based prevention project was implemented for 7th and 5th grade Navajo and Pueblo Indian children. Using the Pathways to Health Curriculum, the researchers found that boys were more likely to use and intend to use cigarettes more than girls. The use of smokeless tobacco also increased with increasing grade level, though this trend was less pronounced for girls. The researchers concluded that there is evidence of experimentation and regular use of tobacco products by both Navajo and Pueblo boys and girls. Even more students' indicated intention to use tobacco products in the future. These data confirm the need for primary prevention programs designed for this population of American Indians. Botvin, Griffin, Diaz, and Ifill-Williams (2001) tested a school-based drug abuse preventive intervention in a sample of predominantly minority students (N=3621) in 29 New York City schools. Results indicated that those who received the program (n=2144) reported less smoking, drinking, drunkenness, inhalant use, and poly-drug use relative to controls (n=1477). The findings from this study show that a drug abuse prevention program originally designed for White middle-class adolescent populations is effective in a sample of minority, economically disadvantaged, inner-city adolescents.

These studies highlight the efficacy of drug prevention programs and point out the need for future research on identifying specific, culturally based risk and protective factors and the need for testing appropriate drug prevention interventions for younger school-aged youth. In addition, studies that include multi-ethnic samples have great utility in identifying cross-cultural risk and protective factors, as well as differential program effects across cultural groups.

The purpose of this research was to document and evaluate those risk and protective factors experienced in a multi-ethnic sample of elementary aged youth across the state of New Mexico. This study was part of a larger research investigation aimed at identifying effective drug prevention strategies for at risk youth in Pre-Kindergarten through sixth grade. In this sub-study, we were particularly interested in examining how ethnicity predicted various personal, family and school related risk factors in fifth and sixth grade students.

METHODOLOGY

The New Mexico State Incentive Grant drug prevention initiative established the states science based programming efforts. Contracted agencies implemented a variety of evidence-based prevention programs for youth in 5th and 6th grade. Most of the programs were directed primarily toward youth, with a few programs focusing on parents/families. A large number of 5th and 6th graders participated in the *Life Skills Training* curriculum developed by Gilbert J. Botvin, which was implemented mainly in rural schools with high percentages of Hispanic and Native American youth, such as the communities of Chama, Dulce (Jicarilla Apache), Tierra Amarilla, Acoma Pueblo, Laguna Pueblo, the Pueblo of Zuni, Roswell and Dexter. The single urban site for implementation of the *Life Skills Training* was in the Santa Fe Public Schools. Student participation in the curriculum was determined by acceptance and approval of the curriculum by school administrative officials. As a universal prevention approach, there were no specific recruitment strategies for student participation. In most cases, the entire student population of fifth and sixth graders of the various school sites participated in the curriculum.

In addition, fifth and sixth grade students participated in the SMART Moves curriculum in San Juan County. Specific schools within the county were identified as 'high risk' for substance abuse and related social problems based on a county needs assessment. School officials within the various school districts were approached about offering SMART Moves as part of classroom instruction, the first point of contact being district superintendents. Other school personal that assisted in identifying specific classrooms for

delivery of the curriculum included the school principals, the Safe and Drug-Free Schools and Community Coordinators, and classroom teachers. The SMART Moves curriculum was implemented in various schools in the communities of Bloomfield, Aztec, Shiprock, and Farmington, which have a high percentage of Native American youth, mainly Navajo. Approximately 40 percent of the youth participants in the SMART Moves curricula in San Juan County were Native American, approximately 30 percent were Anglo, and approximately 25 percent were Hispanic. In addition, SMART Moves was implemented in coordination with the local Boys and Girls Club at local club settings with a small number of youth.

Funds from the New Mexico State Incentive Grant Project also supported locally developed prevention programs with the potential of becoming promising prevention programs or model prevention programs. One of these programs, *Project Venture*, was developed by the National Indian Youth Leadership Project in Gallup, New Mexico, and is now being considered by the Center for Substance Abuse Prevention as a model prevention program. Designed as an intervention specifically for Native American youth, *Project Venture* is a positive youth development approach that encourages youth to develop into capable, caring, and healthy individuals through adventure-based experiential education and service learning in classroom and out-of-school settings and through intensive summer camp and wilderness trek experiences. The approach incorporates elements of traditional wisdom shared by Native elders utilizing alternative methods--outdoor/experiential education, servant leadership (services learning), reconnecting with traditional culture and the natural world--as a means to assist youth develop in healthy and positive ways. *Project Venture* consists of a universal prevention service component and a selective prevention service component. The universal prevention service component was delivered in the school setting and was negotiated between school officials and project staff to determine which classrooms are served and the fit of the services in regard to the school curriculum. Of the identified classes, all students participated in *Project Venture* activities.

Another locally developed prevention program funded through the New Mexico State Incentive Grant Project was *Learning to Lead*, a program developed and implemented by Cornstalk Institute of Albuquerque, New Mexico. The emphasis of the program is on facilitating the transition from elementary school to middle school and from middle school to high school by fostering self-efficacy in academics and social development. The main components of the program include mentoring, tutoring, skills building, experiential education, leadership through service, as well as a family interaction component. Services are delivered within the school setting and also have out-of school activities. The schools selected for the services are in high-risk urban neighborhoods in the City of Albuquerque. The staff of Cornstalk Institute negotiates with school administrators and teachers to identify the classrooms for participation in the Learning to Lead Program. As such, the program maintains a high rate of retention.

Table 1: Grade in School

Grade	Number	Percent	Valid Percent
4th	141	13.3	13.5
5th	466	43.8	44.5
6th	438	41.2	41.8
other	2	.2	.2
missing	16	1.5	
total	1063	100	100

Table 2: Gender

	Number	Percent	Valid Percent
Male	550	51.7	51.0
Female	509	47.9	48.1
Missing	4	.4	
Total	1059		100

As mentioned, this study was part of a larger, state and federally funded drug prevention initiative emphasizing "evidence based" prevention programming. Local evaluation experts were instrumental in the coordination and collection of self report and parent report data.

Participants

Youth in the NM K-6 programs were used to develop the sample reported here. The sample consists of children from some twenty prevention programs throughout the state. Programs were in both community-based organizations and in prevention coalitions and partnerships. Eighty percent of the children in this sample were ages ten and

Table 3: Ethnic Breakdown for the Sample

Group	Frequency	Percent
Latino	388	36.5
Native American	628	40.9
White/Anglo Saxon	194	18.3
Total	1210	95.7

eleven.

In terms of school grade, some 84 percent of the sample were in grades 5 and 6. Most of the remaining children, 13.3 percent were in the fourth grade (Table 1). The gender split for respondents was relatively even with slightly more boys than girls answering the survey (Table 2).

Ethnicity

A negligible number of African American (14 or 1.2%) and Asian American children (2 or .2%) responded to the survey. An additional 67 students identified themselves as "other" or a combination of more than one category. The majority of the survey respondents identified themselves as Anglo or White, Native American or Latino/Hispanic. The Native American respondents could identify themselves as Pueblo, Navajo, Apache, or other Native American. For the purpose of this analysis, Native American respondents were re-categorized to form one large Native American group. Latino respondents were similarly re-categorized from the various response categories that included: Hispanic, Mexican, Central American, South American, Spanish, Puerto Rican, and Cuban. Respondents in the other and mixed categories were eliminated as outliers. Table 3 provides a breakdown of the sample included in this study.

All ethnic groups except for the three largest groups were eliminated from the sample. The resulting total for ethnicity is larger than the entire sample (1063) as some students identified themselves in two or more of the three major ethnic categories. A total of 65 percent of the respondents or 691 of the students indicated that a language other than English was spoken at home. The largest number of these respondents spoke Navajo or Spanish. Pueblo dialects (Tiwa, Tewa, Towa, and Keres) as well as Apache or "Indian" also were identified as the language spoken at home.

Instruments

The statewide evaluation of evidence-based outcomes consisted principally of data collection using a pre-test/post-test evaluation strategy. This was accomplished through the use of a standardized instrument developed in New Mexico that included self-reported measures of substance use and related behaviors. Known as the Pre K-6 Version of "Strategies for Success" evaluation instrument, the survey asks a series of questions about youth experimentation and patterns of current (past 30 day) alcohol, tobacco, and other illicit drug use. The data collection instrument was worded in simple, understandable language for elementary aged youth and was made available in both English and Spanish. This analysis is based upon pre-test, baseline survey responses.

An initial set of evaluation input meetings were held with local evaluators in New Mexico, including those with considerable experience in the assessment of young children. The group was charged with developing a set of measures that would adequately assess program effects in terms of youth and family risk and protective factors, in addition to the assessment of drug outcomes for young children. Through a series of advisory meetings, as well as a search of all academic databases and literature sources, a set of tools were evaluated for appropriateness and a final set of tools was selected. This set of tools included components of the following standardized tools:

- Standardized Parent and Youth Demographic Information Sheets
- The Conner's Rating Scales for Parent
- The Conner's Rating Scales for Teachers
- A Youth Risk Survey (Modeled from the CSAP National High Risk Youth Study)
- The Family Cohesion and Adaptability Scales (FACES III)

Youth in the 5-6th grade age range were administered the Strategies for Success—Youth Risk Survey which also included specific items on lifetime and current substance use. No parent or teacher report data were collected for this older aged sub-sample.

Procedures

Informed consent procedures were developed for each of the data collection sites, and in some cases, parental consent had been previously obtained as part of school district policy for extracurricular school and drug education activities. Local evaluators established data collection schedules and

Table 4: Scale Reliabilities

Scale	Description	Alpha Coefficient
School disruptive behaviors	3 items including fighting, tagging, safe schools violations	0.63
School protective factors	11 items including teacher and staff care for child, school is important to finish, try hard to do well in school, etc.	0.78
Parent communication	3 items including talk to parents about your future, how often do you talk to parents about your problems, etc.	0.32
Family Bonding	5 items including get along well with parents, feel safe with parents, have respect for parents, etc.	0.42
30 day tobacco use	2 items including used chewing tobacco, smoked a cigarette	0.55
30 day illicit drug use	2 items including marijuana use and inhalant use	0.34
Attitude toward use	9 items that included how wrong would adults think, parent think, someone your age think it is for youth to use marijuana, smoke cigarettes, drink alcohol?	0.87
Perceived availability	3 items including how easy to get cigarettes? Marijuana? Alcohol?	0.87
Perceived harm	3 items including how risky is it to tuse cigarettes? Marijuana? Alcohol?	0.82

worked closely with school officials and teachers to gather data during regular school hours. Group administration of the research tools was conducted.

These analyses focused on the survey tool developed for fifth and sixth grade students. A total of nine scales were developed to reduce the number of items investigated and to avoid inflating the probability of finding significant differences among the three ethnic groups. Table 4 illustrates sub-scales and reliability coefficients. Data were cleaned using the method prescribed by Tabachnick and Fidell (1989 67). Univariate outliers were removed within plus or minus 3 standard deviations for each variable. Multivariate analyses were not planned. A composite ethnicity variable was developed using the three largest ethnic categories. This variable was used as the independent variable in one way analysis of variance in order to compare the three different ethnic groups on the protective and risk factors measured with the outcome instrument.

RESULTS

Several of the sub-scales were shown to have low or very low alpha coefficient subscales that were found to be particularly unreliable were PARENT COMMUNICATION, FAMILY BONDING and a two item composite score for illicit drug use. These low reliabilities should be considered in the following analysis.

Levene's statistic to test for homogeneity of variance was conducted for each scale. Several of the comparisons (usually when the scale was unreliable) indicated that the assumption of homogeneity was violated. However, the ANOVA is not sensitive to violations of the assumption of normality for an independent variable with a fixed number of levels (Shavelson 1988). Omega square was conducted to test the strength of the association for each of the analyses completed as the sample size was very large. Table 5 provides the results of the ANOVA tests.

Neither Disruptive School Behavior nor Parent Communication yielded a significant comparison indicating that the means for the three groups on these scales are essentially the same. However the reliability for parent communication scale was extremely low. Usually when the scale was unreliable significant differences among the means were not found. However, a number of the comparisons were significant. Post hoc Sheffe tests were conducted to identify which means were significantly different for each of the scale comparisons. For the School Protective Factors scale, Anglo students had the highest mean score followed by Native Americans. Latino students scored the lowest on this scale indicating the fewest protective factors. Anglo students scored significantly higher than Latino students with no significant difference between the mean scores of Latino and Native American students on this scale. For

Table 5: ANOVA Results Including Mean Scores and Omega Square Tests

Scale	N	Mean	DF	F	Sig.	Omega Squared
Disruptive School Behavior	Anglo 169	2.17	Between 2	1.159	0.314	n/a
	Latino 266	1.79	Within 1013			
	Nat. Am. 581	1.86	Total 1015			
Protective School Factors	Anglo 169	37.68	Between 2	11.674	0	0.0215
	Latino 266	39.19	Within 1014			
	Nat. Am. 582	37.41	Total 1016			
Parent Communica-	Anglo 169	6.41	Between 2	2.299	0.101	n/a
	Latino 266	6.96	Within 1013			
	Nat. Am. 581	6.56	Total 1015			
Family Bonding	Anglo 169	4.66	Between 2	5.279	0.005	0.0083
	Latino 266	4.61	Within 1013			
	Nat. Am. 581	4.48	Total 1015			
30 Day Tobacco Use	Anglo 169	0.005	Between 2	13.863	0	0.0247
	Latino 265	0.003	Within 1012			
	Nat. Am. 581	0.17	Total 1014			
30 Day Illicit Drug Use	Anglo 169	0.008	Between 2	8.4216	0	0.0145
	Latino 265	0.007	Within 1011			
	Nat. Am. 581	0.18	Total 1013			
Attitude Toward Use	Anglo 169	34.47	Between 2	4.216	0.015	0.0063
	Latino 265	34.42	Within 1012			
	Nat. Am. 581	33.76	Total 1014			
Perceived Availability	Anglo 168	6.34	Between 2	13.742	0	0.0246
	Lation 262	5.85	Within 1007			
	Nat. Am. 580	5.01	Total 1009			
Perceived Harm	Anglo 158	6.83	Between 2	4.894	0.008	0.0082
	Latino 247	7.13	Within 936			
	Nat. Am. 534	6.47	Total 938			

the Family Bonding scale, Anglo students once again had the highest mean score and this was significantly different from the mean score for Native Americans which were the lowest on this scale. There was no significant difference between the mean score for Latino students and Native American students.

For both 30-day tobacco use and 30-day illicit drug use, Native Americans reported significantly higher use than the other two groups. Latino and Anglo students did not differ in their drug or tobacco use as measured by this instrument. In terms of the Attitudes Toward Drug and Tobacco Use scale, Native Americans scored significantly lower than the other two groups indicating that they have more liberal attitudes toward drug use as compared to their non-Native peers and would explain the higher rates of drug use in the Native American sample. There was no difference between the Anglo and Latino students on this scale. Native Americans also considered drug, alcohol, and tobacco more available than their non-Native peers did. Their score on this measure was significantly lower than their peers who did not differ from each on the Availability scale. Finally, on the scale that measured student perception of the harm from using drugs, alcohol, and tobacco, Latino students perceived substance use to be significantly more harmful than Native American and Anglo students did. Native Americans were found to to have significantly lower scores when compared to either Anglo or Latino students. There was no difference between Latino and Anglo students on this scale.

Omega square tests also were conducted to identify how much of the variance in the dependent variables was accounted for by the comparison among the three ethnic groups. The largest amount of variance accounted for was on the 30-day Tobacco Use, Perceived Availability, and School Protective Factors scales. However the amount of variance accounted for on these scales was between 2.15 percent and 2.47 percent, relatively small amounts. Overall, although there were statistically significant differences among the three groups related to ethnicity, other factors are probably accounting for more variance than this variable does.

DISCUSSION

A relatively large sample of elementary

school aged youth in grades four through six took a standardized risk and resiliency survey to assess baseline attitudes and behaviors with regard to alcohol, tobacco, and other drug use. This sample included three large ethnic groups with no prior exposure to science-based prevention programs in their schools and communities. First, our results demonstrate the success of the New Mexico State Incentive Grant Initiative in recruiting a uniquely multiethnic sample of children. Demographic information suggests a great deal of cultural variation in the sample, with a number of distinct languages spoken in the homes of these children. In addition, this sample was comprised of children residing in both rural and urban communities, and also included youth who reside in tribal communities.

There were significant differences between the groups. Results of the eight comparisons were significant indicating that the groups differed on the risk and resiliency scales and drug use rates, although some of the Omega Square tests indicated that the significant differences did not account for a significant amount of variance in these measures. The strength of association was small. Of particular interest were the higher use rates of alcohol and drugs among Native American children, and this coincided with their more liberal attitudes toward drugs and lower perceptions of harm. Tribal and Pueblo communities may experience a number of historical and current day trauma that could result in increased risk for drug use, although it must be noted that this sample is not representative of all children statewide but only those recruited into drug prevention services. Overall, Anglo students faired much better across all the eight risk and protective factors and had low drug, tobacco and alcohol use rates.

Future research must continue to focus on ethnicity and culture in explaining differences in risk and protective factors. Statewide, normative samples using similar risk and protective measures could shed additional light on these issues. In addition, based on data from this study, drug prevention strategies must be uniquely tailored to meet the need of different groups. For example, our study suggests that Latino students have few school related protective factors in the school domain. These are the same factors that other researchers have found both at the statewide and national levels related to excessively high academic failure rates. Drug prevention initiatives for Latinos must include some form of school enhancement strategies that could involve their English and non-English speaking parents. In addition, our result suggests that there is a particular need for addressing attitudinal risks and perception of availability in tribal and other native American communities. Prevention and evaluation research on model programs implemented in tribal communities must ensure their success in strengthening these factors among Native American children and may require specific cultural adaptation to existing science based prevention programs. Finally, more research is needed in the development of valid and reliable measures for multiethnic children given that existing standardized tool used in this study were shown to have some weaknesses, particularly Parent Communication and Family Bonding scales.

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TRAUMA REGISTRIES AS A POTENTIAL SOURCE FOR FAMILY VIOLENCE AND OTHER CASES OF INTIMATE PARTNER VIOLENCE FOR BORDER COMMUNITIES: INDICATOR DATA TRENDS FROM 2000-2002

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In developing a measured public health response to Intimate Partner Violence (IPV) and other manifestations of family violence in U.S.-Mexico Border communities, there is a need for substantive, valid and reliable data. While in the past decade, border gateway cities have drawn national media and policymakers' attention and interest; this attention has been largely on narco-trafficking and drug related violence. In El Paso and Ciudad Juarez, attention has been drawn to serial killings of young Mexican women. Yet, little or next to nothing is reported in terms of IPV and other manifestations of family violence in these communities. There is a clear need for behavioral health data attending to IPV and other manifestations of family violence: its etiology, epidemiology and consequences.

For the last fifty years, the U.S.-Mexico border region's communities have been seen largely as gateway cities for Mexican nationals and Mexican-Americans to other parts of the U.S. The region's *distinct communities along the U.S.-Mexico border* have experienced great growth and change. These communities have areas and families that may be viewed as underserved. The border twin cities pose special political problems for policymakers and those seeking to meet public health and social service needs. These border cities and communities have longstanding and emerging problems. Yet, these problems are missing from national and state policymakers' agendas and priorities (Texas Department of Human Services 1998). This invisibility has left social services programmers and public health practitioners with limited options or alternatives for addressing old, new and re-emerging public health agenda issues.

Violence is one of those issues (Paulozzi, Saltzman, Thompson, & Holmgreen 2001; National Research Council 1996; Felitti, Anda, Nordenberg, Williamson, Spitz, Edwards, Koss, & Marks 1998; Wisner et al 1999). IPV and related family violence are among the more common manifestations of violence. IPV incidents and their consequences are more commonly experienced by border community's' residents than others. Yet, border communities IPV issues and concerns are missing from major national and state efforts (FBI 2001; US Department of Justice 1998; Center for Policy Research Stalking in America 1997; Trapped by Abuse; The Taylor Institute 1997), especially data which could be used to inform preventive and intervention IPV services. These monitoring and surveillance data could be used to inform preventive and intervention services for border communities (Mata, Rocha, Blough, & Lopez 1999).

In Texas, family violence incidents have not increased from 1997 to 2001. But the number of women killed by an intimate partner has increased about 10 percent from 1997 to 2001. Most batterers were 20 to 24 years of age followed by 25 to 29. Yet, in Texas, 35 percent of female homicide victims are murdered by an intimate partner. This is a rate that is substantially higher than reported by the Federal Bureau of Investigations (FBI) (Texas Department of Public Safety 2001). To date, there are no major reports of border cities' IPV incidents and consequences similar to those being reported to the state by non-border cities.

There is a clear need for data and data systems that attend to major aspects of IPV and related family violence manifestations (Tjaden & Thoennes 2000; Gazmararian, Petersen, Spitz, Goodwin, Saltzman, & Marks 2000; Straus & Gelles 1990; APA Taskforce on Violence and Family 1996; Tolman & Raphael 2000). Medical centers' Trauma Registries (TR) can play a pivotal role in identifying key IPV and other related family violence issues, vulnerability and other consequences (Wisner, Gilmer, Saltzman, & Zink 1999; National Research Council 1996; Felitti et al 1998; Gazmararian et al 2000; AMA Medi

cal News 1992).

In this paper, we will explore the role of hospitals TRs, their use and limitations for identifying family violence cases and the data implications for border communities' policy and programming efforts. In short, what is the role and nature of hospital TRs for border IPV surveillance & monitoring systems? What are these TR data promises and limitations? What is the overlap between "IPV" cases to "drug" and "alcohol-related" trauma and to "other trauma" in general? What alternative perspective and implications do TR monitoring systems pose? What is the possibility for border-wide IPV surveillance systems? The data highlighted in this article is from the TR in El Paso, Texas at Thomason Hospital.

Family Violence and other IPV issues remain a key concern among communities along both sides of the U.S.-Mexico border. Intimate partner violence-or IPV-is defined as threatened physical or sexual violence or psychological and emotional abuse directed toward a spouse, ex-spouse, current or former boyfriend or girlfriend, or current or former dating partner. Intimate partners may be heterosexual or of the same sex. Some of the common terms used to describe intimate partner violence are: domestic abuse, spousal abuse, domestic violence, family violence, courtship violence, battering, marital rape, and date rape (Saltzman, Fanslow, McMahon, & Shelley 1999). The Centers for Disease Control and Prevention (CDC) use the term intimate partner violence as it describes violence that occurs within a range of intimate partner relationships. Some of the other terms are overlapping and may be used to mean other forms of violence including abuse of elders, children, siblings, and other family members (CDC 2003). National, state and Third Sector effort's need to assist local communities seeking to provide IPV and related family violence services. The continued use and improvement of TRs by state and national health and mental health services could serve to give policymakers, researchers and practitioners the important data they need to address the IPV problem.

THE NEED TO REDEFINE IPV AND RELATED FAMILY VIOLENCE IN BORDER COMMUNITIES

Periodically, the U.S.-Mexico border communities' health problems are "rediscovered." Yet, the problems of IPV and related family violence largely remain outside the scope and interest of national and state public health policy and programming efforts (US Department of Justice 2001; FBI 2001).

Most concerns about violence remain linked to drug-related sexual assault and to drug-related violence, thus placing them largely within the criminal justice perspective. Border communities IPV and related family violence have been outside the scope of the Department of Justice's (DOJ) Victimization studies. They have also been outside CDC's special reports or other Department of Health and Human Services (DHHS) IPV monitoring and surveillance efforts. In border communities, comprehensive, coordinated and effective IPV services are missing and unaddressed (Trapped by Poverty Trapped by Abuse, Taylor Institute 1997).

While subject to occasional studies, these fail to adequately address IPV and related family violence issues and its public health consequences. Many health and human service professionals in border communities recognize the serious, impacting nature and consequences of IPV and family violence—yet there is little data or assessment of the problem nor is there information about how border communities compare to non-border cities. While recognizing the potential and limitations of border communities' IPV data, there is a clear need to expand and enhance its use as well as measures of its health consequence (National Institute of Justice 1998; US Department of Justice 1994a, 1994b, 2001; and National Research Council 1996). Border hospitals TR's are in unique positions to fill this IPV gap.

We suggest that TRs have great potential for addressing IPV and related family violence health consequences. Here we suggest the importance and limits of Texas-based TRs for monitoring, surveillance and policy research. Second, we will discuss how utilizing TRs in border communities will help redefine the U.S.-Mexico Border IPV and related family violence issues. Then, we will present data that profiles key patterns and trends for major border gateway cities. These are data that need to be compared and contrasted to other border cities. Lastly, we discuss the potential of the borders' IPV data for monitoring, reporting and service planning. Here we will suggest that TR data are available for all border cities and can provide im-

Table 1: Trauma Essential and Desired Reporting Data Items as Per The Texas Department of Health

ESSENTIAL	DESIRED
Facility Number	Trauma Number
Medical Record Number	Patient Name
Race/Ethnicity	Social Security Number
Sex	Pulse
Date of Birth	Revised Trauma Score
Date of Injury	Lenth of Stay
County of Injury	ICU Days
Cause of Injury	Five AIS Codes
Time of Injury	Five ICD9 Procedure Codes
County of Residence	Five ICD9 Pre-existing Condition Codes
Place of Injury	Body Region X Severity
Date of Arrival	Body Region X Surgery
Time of Arrival	Revised Trauma Score at Scene
Alcohol Level Tested	Ambulance Firm Number
Alcohol Level	Total Reimbursement
Blood Pressure	Vehicle Extrication
Respiration Rate	For First Hospital: Date of Arrival
Glassgow Coma Scale	Time of Arrival
Discharge Destination	Date of Departure
Discharge Condition	Time of Departure
Date of Discharge or Death	
Time of Discharge or Death	
If Discharge to Facility, Facility Number	
Five ICD9 Diagnostic Codes	
Injury Severity Score	
Payor Category	
Billed Hospital Charges	
Systolic Blood Pressure at Scene	
Glassgow Coma Score at Scene	
Dispatch Time	
Arrival Time	
Leave Scene Time	
Protective Devices	
Transfer	
Referral Facility	

Source: Texas Department of Health, 2002

portant IPV health consequences data. These data are useful not only for applied and administrative research but they can serve as a basis for prospective basic and policy research.

TR AND FAMILY VIOLENCE AND IPV CASE MONITORING: PROMISE AND LIMITATIONS

In Texas, TRs have been established for nearly twelve years (Rocha, Mata, Tyroch, McLean, & Blough 2005). While data for this essay was generated from Thomason Hospital's TR which was initiated in 1994, this paper only covers the year 2001. As in other parts of the country, hospitals used TRs to measure the quality of trauma care and to evaluate the effectiveness on health outcomes. A second major utility of TRs is for injury surveillance, patient care and patient cost. The data collected varies by local TR. State mandated reporting usually includes patient demographics, injury severity, medical care procedures, health outcomes, and medical costs. In terms of injury surveillance and monitoring purposes for the U.S.-Mexico Border region, TRs have important potential for the highlighting of IPV and related family violence issues.

Since the first TR in Chicago in the 1950's[1], their role has been to monitor and evaluate trauma patient care for healthcare entities and the regional EMS systems that they belong to; to identify and report major trauma injuries and outcomes; and to provide a sense of how to prevent, treat and reduce trauma costs. TRs are databases that collect, archive and report information about patients that they receive through a trauma care services system. Patient inclusion into a TR system generally requires that the pa-

tient population meet specific criteria:

- ICD Codes (967.0-967.9)
- Admission to ICU or hospital floor
- ICD9 Code[2]
- Injury Severity Score[3]

In 1989, the Texas legislature recognized the need and challenge that collecting standardized trauma data from over 450 hospitals would present and allowed reporting entities to file their data electronically either on a quarterly or annual basis. In Texas, four regions ranging from El Paso to Brownsville cover the Texas border (TDH 2001). In 1990, the state legislature mandated the reporting of certain trauma cases. On August 31, 1996, the Texas state legislature required the state's Department of Health and hospital trauma units to gather data about trauma in Texas. One objective was to identify severely injured trauma patients within each healthcare agency. Others monitoring patient care within each hospital unit and regional emergency medical services network were required to identify the total amount of uncompensated trauma care delivered each fiscal year. All medical facilities needed to report to the Texas Department of Health (TDH) Injury and Control Division. Minimal data sets consist of TR data that is required by the Texas Department of Health (TDH). Due to the need for confidentiality, all public health reports of data are reported in the aggregate. Also, security measures and guidelines were developed to limit access to registry data. Generally, TRs include all cases with ICD 9 codes of 800 to 959. It must be recognized that the collecting of standardized data is set by the state legislature and corresponding state agency(s).[4]

The actual collection of TR data is guided by state and hospital reporting guidelines. This mandate has allowed hospitals to report required essential elements as well as desired optional elements. In a sense, there are minimal required reportable and desired data elements. Desired data elements are variables, which state, professional, and some local agencies would like to see collected, but are not mandatory. In Texas, Table 1 lists the hospital data items and whether their collection is essential or desirable.

Thomason Hospital is an American College of Surgeons verified Level I-trauma facility. Thomason initiated the TR in 1994 and has continued since then to provide TDH-mandated minimal trauma level data and serve as the lead hospital for the Far West Texas and Southern New Mexico Regional Advisory Council on Trauma (FWT & SNM RAC). The state of Texas is divided into 11 RACs. The RAC for the Far West Texas and Southern New Mexico region has eight hospitals which participate in pooling TR data on an ongoing basis[5]. The FWT & SNM RAC is unique, in that it covers four Texas counties and seven New Mexico counties[6]. Trauma care is provided through a four-tier system of providing care to acute and injured patients. Level one trauma centers are tertiary care facilities central to any Trauma Care System (TCS). Level twos provide initial definitive care regardless of severity of injury. They can be academic, community, public or private facilities located in rural, suburban and urban settings. The following describes each of the four tiers of this trauma core system.

Level I:

A Level I facility is a regional resource trauma center serving as the area's tertiary care facility. Tertiary Care Centers are central to the trauma care system. Each facility must have the capability of providing leadership and total care for every aspect of injury, from prevention through rehabilitation. In its central role, a Level I center must have adequate Emergency Care facilities and personnel. Because of the large number of personnel and facility resources required for patient care, education, and research, most Level I trauma centers are university-based teaching hospitals. Other comprehensive hospitals willing to commit these resources, however, may meet the criteria for achieving a Level I certification recognition.

In addition to acute care responsibilities, Level I trauma centers have the major responsibility of providing leadership in education, research and system planning. This responsibility extends to all hospitals caring for injured patients in their regions. Medical education programs include residency program support and postgraduate training in trauma for physicians, nurses, and pre-hospital providers. Education can be accomplished through a variety of mechanisms, including classic continuing medical education (CME), training institutes, preceptorships, personnel exchanges, and other ap-

Table 2: Number of Total Trauma Admissions by Year for Drugs and Alcohol for Thomason Hospital and the Far West Texas and Southern New Mexico Regional Advisory Council on Trauma Between 1996-2001

	Number of Trauma Admissions By Year											
	Thomason Hospital						Far West Texas and Southern New Mexico Regional Advisory Council on Trauma Between 1996-2001					
	1996	**1997**	**1998**	**1999**	**2000**	**2001**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
Total Admissions	1031	1145	1496	1663	1595	1653	1046	1769	2031	2299	2789	2735
Drugs Only	151	200	264	219	248	207	151	270	333	265	248	208
Males	117	153	198	179	212	161	117	214	252	209	212	162
Females	34	47	66	40	36	46	34	56	81	56	36	46
Alcohol Only	439	330	420	413	382	338	439	504	629	510	484	441
Males	349	280	348	347	333	285	349	419	502	427	412	371
Females	90	20	72	66	49	53	90	85	127	83	72	70

Source: Thomason Hospital Trauma Registry

proaches appropriate to the local situation. Research and prevention programs are essential for a Level I trauma center. These hospitals provide important services and data to community outreach and education as it concerns serious injuries and trauma (CTACS 1999).

Level II:

The Level II trauma center is a hospital that is also expected to provide initial definitive trauma care, regardless of the severity of injury. However, depending on geographic location, patient volume, personnel, and resources, the Level II trauma center may not be able to provide the same comprehensive care as a Level I center (for example, patients requiring extended surgical critical care). Level II trauma centers, however are the most prevalent type of facility in a community that manages the majority of trauma patients (CTACS 1999).

Level III:

The Level III trauma center serves communities that do not have immediate access to a Level I or II institution. Level III trauma centers can provide prompt assessment, resuscitation, emergency operations, and stabilization; and may also arrange for possible transfer to a facility that can provide definitive trauma care. General surgeons are required in a Level III facility. Planning for care of injured patients in these hospitals requires transfer agreements and standardized treatment protocols. Level III trauma centers are generally not appropriate in an urban or suburban area with adequate Level I and/or Level II resources (CTACS 1999).

Level IV:

Level IV trauma facilities provide trauma life support prior to patient transfer in remote areas where no higher level of care is available. Such a facility may be a clinic rather than a hospital and may or may not have a physician available. Because of geographic isolation, however, the Level IV trauma facility should be an integral part of the inclusive trauma care system. As at Level III trauma centers, treatment protocols for resuscitation, transfer protocols, data reporting, and participation in system performance improvement (PI) are essential.

A Level IV trauma facility generally has a good working relationship with the nearest Level I, II, or III trauma center. This relationship is vital to the development of a rural trauma system in which realistic standards must be based on available resources. Optimal care in rural areas can be provided by skillful use of existing professional and institutional resources supplemented by guidelines that result in enhanced education, resource allocation, and appropriate designation for all levels of providers. Also, it is essential for the Level IV facility to have the involvement of a committed health care provider, who can provide leadership and sustain the affiliation with other centers. These facilities are key to providing critical care in many border communities (CTACS 1999).

Along the border, there are few of these key critical care institutions. Thus levels III & IV hospitals are the major community trauma resource for their respective border communities. In most major cities substance abuse injury surveillance is possible through TR, the state respective transportation depart-

Table 3: Thomason Hospital Trauma Patient Profile for Selected Categories in 2001

Characteristic	IPV	Drug Only	Alcohol Only	Other
	2001			
	26	201	25	207
Number (N)	25	25	25	25
Charges				
Average Charges	$9,068	$36,555	$18,614	$12,247
Sum Charges	$226,698	$913,886	$465,361	$306,183
Injury Severity Score				
Avg ISS	7	15	7	6
Range	25	37	18	23
Type of Injury				
Blunt	44%	84%	80%	92%
Penetrative	52%	12%	16%	4%
Other	4%	4%	4%	4%
Site of injury*				
Street/highways	12%	60%	56%	52%
Home	64%	8%	20%	16%
Specified other	12%	28%	20%	12%

*Top three site of injuries will not total to 100%.
Source: Thomason Hospital Trauma Registry

ment and criminal justice arrests and conviction reports. All of these data systems reflect various aspects of substance abuse consequences.

BACKGROUND AND CONTEXT SUBSTANCE ABUSE AMONG TRAUMA ADMISSIONS-THOMASON HOSPITAL:

A profile of the selected groups

During the 2001 calendar year, there were 1,653 trauma admission cases as compared to 1,031 in 1996 (Table 2). Since 1996, there has been a 35 percent increase in total trauma admissions. During the 2001 calendar year, over three-fourths (81%) were Hispanic, 2 percent were African-American, and 1 percent were members of other racial/ethnic groups. There was a 39 percent increase between 1996 to 2001 of drug-related admissions. In terms of alcohol-related admissions, the number has decreased significantly each year from 1996 to 2000. In 1996, there were 439 alcohol-related admissions, which decreased to 382 cases in 2000, representing a 13 percent decrease.

Forty percent of these admissions had used drugs or alcohol, whereas 16 percent of the admissions had used "drugs only" (Table 2). Eighty-five percent were male. A majority (27%) of trauma patients in 2000 were between the ages of 18-25 and male. Between 1997-2000, there was a 21 percent increase in the total number of drug-related cases seen at Thomason Hospital. Also, there was an 8 percent increase in the number of males being admitted to Thomason Hospital for drug-related issues. There was a 3 percent increase in males being admitted for alcohol-related cases between 1997-2000.

However, for females there was a 2 percent decrease for alcohol-related trauma and an 8 percent increase for drug-related cases. There was no significant age increase when examining the data by individuals being admitted since 1997.

Yet, while blunt trauma (Table 3) has been increasing penetrative trauma has been decreasing (39%) since 1997, and blunt has increased by 3 percent.

These data suggest variations in cases presenting to Thomason's Trauma Center. Marked differences may be observed between drug, alcohol and non-substance abuse-related trauma care patients. It is unclear how these patterns maybe related to IPV cases. However, it does raise the question: how are IPV cases similar to other types of trauma? We next will discuss the study's methodology and its results.

Methodology

The cases examined in this pilot study were derived from female trauma admissions at Thomason Hospital during 2001. This analysis only includes females between the ages of 18-60 years. The variables included were as follows: *category of subjects, age, ICD9 codes (one to seven codes per patient), Injury Severity Score, county of residency, hospital charges, insurance payor (insurance paying the hospital charges), date of admis-*

Table 4: Injury Severity Score Calculation

Region	Injury Description	AIS	Square	Top Three
Head & Neck	Cerebral Contusion	3	9	
Face	No Injury	0		
Chest	Flail Chest	4	16	
Abdomen	Minor Contusion of Liver	2		
	Complex Rupture Spleen	5	25	
Extremity	Fractured femur	3		
External	No Injury	0		
	Injury Severity Score:			**50**

Source: Center for Disease Control, 2003

sion, blood alcohol level, positive for alcohol, positive for illicit drugs, number of illicit drugs in system, medical record number, ethnicity, etiology, type of injury (blunt or penetrating) and other recorded variables. This pilot study's total sample size is 100 trauma cases (Table 3). The design utilized a case control methodology. A case-control study can identify risks and trends, and can suggest some possible causes for particular outcomes of a program. The trauma cases for alcohol, drug and other trauma were randomly selected. The IPV cases were selected from an unscreened population. The cases were then followed-up by pulling the trauma registry record and verifying these were documented IPV cases.

The ISS is an anatomical scoring system that provides an overall score for patients with multiple injuries. Each injury is assigned an Abbreviated Injury Scale (AIS) score and is allocated to one of six body regions (Table 4) (Head, Face, Chest, Abdomen, Extremities, including Pelvis, External). ISS range from 1-75, with 1-14 being stable and 15 or higher being critical. Only the highest AIS score in each body region is used. The 3 most severely injured body regions have their score squared and added together to produce the ISS score. We now will turn to specific measures and protocols (CDC 2003).

An example of the ISS calculation is shown below:

ICD-9-CM is the official system of assigning codes to diagnoses and procedures associated with hospital utilization in the United States. The ICD-9 is used to code and classify mortality data from death certificates (CDC 2003).

The ICD-9-CM consists of:

- a tabular list containing a numerical list of the disease code numbers in tabular form;
- an alphabetical index to the disease entries; and
- a classification system for surgical, diagnostic and therapeutic procedures (alphabetic index and tabular list).

The process (Figure 1) begins by abstracting trauma patients, then entering them into Thomason's TR. The TR utilizes the Collector (a TR software package) and is critical to the development and maintenance of this database. The Collector software version utilized was 3.28, 1997-2002. Collector is one of the commercial software packages used in the state of Texas for trauma registries. Then, after abstracting, we used the Statistical Package for Social Sciences (SPSS). Specifically, we selected a random sample using SPSS to compare to the IPV cases (SPSS 1999, Ver. 10).

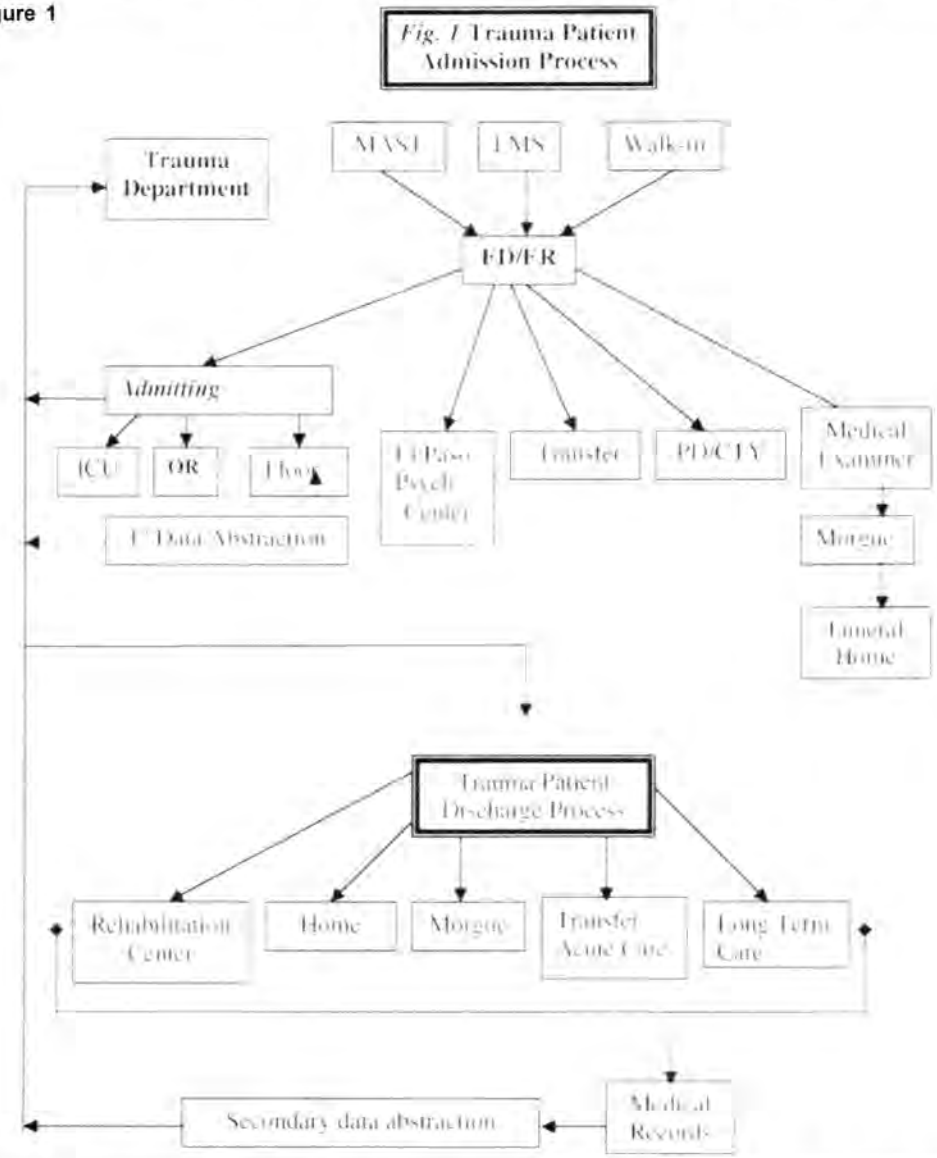
The sample was then categorized into four groups: 1) self reporting and/or ED staff identification of IPV cases; 2) female trauma admissions to Thomason Hospital who subsequently tested positive for alcohol; 3) female trauma admissions to Thomason who were under the influence of illicit drugs and finally 4) females who were admitted to Thomason for Trauma and who were not under the influence of any illicit drugs or alcohol. These categories allow one to compare and better understand how IPV cases differs from other types of trauma. Moreover, it also other similar types of trauma.

FINDINGS

Overall Sample Characteristics

Almost half of the TR's IPV cases are females between the ages of 18-24 (26%) or 31-40 (24 %). As this is a major Texas-Mexico border community, a majority of the patients were Hispanic (79%). Followed by White, Non-Hispanic 19 percent. The two most common sites of injury were motorways (45%)

Figure 1



followed by domicile (27%). When examining the type of injury (blunt or penetrative injuries) three quarters of all cases reported blunt injuries. Only 21 percent of cases reported penetrating trauma with 4 percent being unknown. The crucial distinction when examining ISS is as follows: 1-14 considers the patient to be stable and 15 to 75 are critical. Using the ISS, 78 percent of the trauma cases ranged from 1 to 14, with an average of 7. There was a median response of 1. Among alcohol trauma care patients, there were three major modalities. Of all cases, 60 percent cost between $1-$10,000. In the second modality, 16 percent ranged from $10,001-$20,000. In the last, 12 percent ranged from $20,001-$40,000. The average ISS was 8.67; yet most ISS reported a 1. Twenty-seven percent report at least one illicit drug in their system at the time of admission, with 11 percent having two or more drugs in their system at the time of admission. Cocaine (14%) was the most frequently used illicit substance. Heroin and Benzodi-

Table 5: Thomason Hospital Trauma Patient Profile for Selected Categories in 2001

	2001			
Characteristic	**IPV**	**Drug Case**	**Alcohol Case**	**Other**
	26	**201**	**338**	**207**
Number (N)	**25**	**25**	**25**	**25**
Age				
18-25	32%	32%	28%	32%
26-35	36%	24%	28%	20%
36-46	20%	40%	40%	12%
47+	12%	4%	4%	36%
Race/Ethnicity				
Hispanic	72%	88%	68%	88%
White-non-Hispanic	24%	12%	28%	12%
African-American	4%	0%	0%	0%
Other	0%	0%	4%	0%
Primary Payor*				
Bluecross/Blueshield	40%	36%	36%	40%
Medicaid/Medicare	24%	36%	36%	36%
Self pay	32%	16%	12%	8%

*Will not total 100%
Source: Thomason Hospital Trauma Registry

Table 6: Site of Injury for Thomason Hospital Trauma Patients 2001

	2001			
Site	**IPV**	**Drugs**	**Alcohol**	**Other**
Number (N)	**25**	**25**	**25**	**25**
Street/Highway	12%	60%	56%	52%
Home	64%	8%	20%	16%
Public Building /Residential Institution	0%	4%	4%	8%
Other (specified & unspecified)	24%	28%	20%	12%
Unspecified	0%	0%	0%	12%

Source: Thomason Hosptial Trauma Registry

azepines were the next most often used substances.

Trauma patients' payment of trauma care hospital charges were largely through private health insurance (38%) followed by public health insurance (30%). The remainders were self-paying patients. Trauma care (Table 5) is primarily paid for by the private and commercial health insurance companies. We will now turn to closer examination of this overall sample by comparing IPV patients to drug, alcohol and the other trauma cases.

The only group whose site of trauma did not occur most often on the motor-ways was IPV cases which happened at home (64%). The other three subgroups had the majority of trauma case occurring on the motorways ranging from 52 percent to 60 percent. For IPV cases the next most often site of occurrence was "Other" (specified & unspecified) (Table 6).

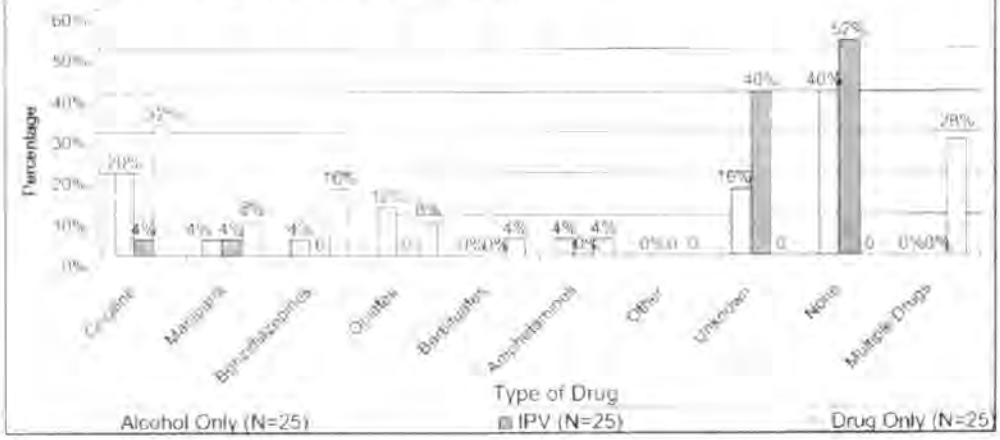
IPV Related Cases

The first sub-group consists of all IPV (but one) cases presenting to the Thomason Trauma Center in 2001. The racial/ethnic composition was: 1) 72 percent Hispanic; 2) 24 percent White and 3) 4 percent African-American. While the average age was 32 years of age; the ages ranged from 19 to 58 years of age. Among IPV cases the average ISS was 7, and the scores ranged from 1 to 26. A majority of cases (88%) were from El Paso County with only 12 percent of cases being out of state.

These cases were identified at admission with a trauma-related ISS that required further injury examination and treatment. While blunt injuries comprised 44 percent, penetrating cases consisted of 52 percent, with only 4 percent reporting unspecified type of injuries. The most frequently reported cases involved lacerations of the chest (3), followed by laceration of the anterior abdomen and traumatic hemothorax. A few cases involved multiple blunt and penetrative injuries that made categorizing difficult. Among these latter cases they could have involved both blunt and penetrative injuries.

The majority of cases occurred at their domicile (64%), followed by 24 percent at

Chart 1: Type of Illegal Drugs Used by a Sample of Trauma Admissions at Thomason Hospital in El Paso, Texas, 2001



unspecified location(s) and 12 percent occurring on motorways. There were more penetrative injuries then blunt injuries among IPV cases. Among the IPV trauma cases only two tested positive for drugs. The first case involved a female patient who had used cocaine. The second case involved a female who had used marijuana.

The average charge for IPV-related injuries at Thomason was $12,247.31. The range was $1,160.61-$119,871.10. Among IPV cases, 40 percent were private health insurance, while 32 percent were self-paying and 28 percent utilized public health insurance. A little less then a third of all IPV cases were self-paying patients.

Illegal Substance Abuse Related Trauma Cases

Females admitted to Thomason for traumatic injuries while under the influence of illicit drugs ranged in ages from 31-40 with the average age of 32. Forty percent were between 31-40, 28 percent were 18-24. The average ISS was 14.84 with others reporting scores from 1 to 38. These patients generally suffered from either a closed skull base fracture or intra cranial injury or pelvic fracture. A majority of trauma patients were from El Paso County (68%). Thirty-two percent of substance abuse cases were from out of state.

Among these cases, 60 percent occurred on motorways and 28 percent occurred in unspecified places, while the remaining 12 percent occurred at home or in a public building. The ethnic composition was (88%) Hispanic and (12%) White, Non-Hispanic. The most commonly reported type of trauma involved blunt trauma - 84 percent. The remaining were penetrative injuries (12%) followed by 6 percent for unknown cases.

Fifty-two percent of women admitted were found to be legally intoxicated. Thirty-eight percent of alcohol-related cases were found to have used cocaine (Chart 1). Additionally, thirty-two percent had used benzodiazepines. Slightly more than 72 percent had used only one drug while 28 percent had two or more illicit substances.

The average charge for a female who was admitted to Thomason Hospital for traumatic injuries while under the influence of illicit substances was $35,499.99, with charges ranging from $2,023 to $182,649.33. A majority of trauma care charges were covered by private health insurance (36%) and public health insurance (26%) respectively. Only one percent of these cases was self-paying. Examining Table 7, the data details each of the subgroup's use of various substances - cocaine was the most commonly used with 32 percent. For the alcohol subgroup, the largest drug use group was cocaine. For IPV cases the largest drug use cases were cocaine and marijuana. Yet even among alcohol only cohorts who also tested positive for drugs—cocaine was the preferred substance.

Alcohol-Related Trauma Cases

The majority of the population (68%), were

Table 7: Type of Illegal Drugs Used by a Sample of Trauma Admissions at Thomason Hospital in El Paso, Texas, 2001

*Drugs	IPV	Drugs	Alcohol
Number (N)	**25**	**25**	**25**
Cocaine	4%	32%	20%
Marijuana	4%	8%	4%
Benzodiazepines	0%	16%	4%
Opiates	0%	8%	12%
Barbituates	0%	4%	0%
Amphetamines	0%	4%	4%
Other	0%	0%	0%
Unknown**	40%	0%	16%
None	52%	0%	40%
Multiple Drugs*	0%	28%	0%

*Multiple drugs comprised of Cocaine+THC, Cocaine+Opiates, Cocaine+THC+Opiates, Opiates+Benzo, Opiates+THC.
**Not tested
Source: Thomason Hosptial Trauma Registry

Hispanic with 28 percent being White non-Hispanics and other ethnic groups comprised of 4 percent. Their ages ranged from 21 to 52 years of age. Among alcohol-related trauma cases, the average age was 34. The ISS ranged from 1 to 19 with the mean ISS being 6.76. Only 16 percent were penetrative injuries. Nearly a quarter of cases (24%) had an ISS above 15. Most ISS were 14 or below. Eighty percent of cases were from El Paso. Sixteen percent came from New Mexico. Also, there was 1 case (4%) from Webb County.

Most alcohol-related trauma cases occurred on motorways (56%), followed by 20 percent occurring at home. The remainder occurred elsewhere. Eighty percent of the blunt injuries tested positive for alcohol. Among alcohol patients, 56 percent of the sample did not have any illicit drugs in their system. Moreover, 18 of these patients (72%) were found to be over the legal limit of intoxication — the lowest being .02 and the highest being .34 or four times over the legal limit. The presence of illicit drugs in this sub-group was evident upon subsequent toxicology examinations. Overall, 44 percent of this subgroup had used illicit substances. Among these cases, 28 percent tested positive for a drug. Cocaine was the most frequently used substance. It was followed by heroin, marijuana, Benzodiazepines and amphetamines. The rest of these women did not test positive for illicit drugs. Eighty percent had used at least two illicit substances. Moreover, 8 percent tested positive for having used three or more illicit drugs. Again, among alcohol patients 56 percent of the sample did test positive for any illicit drugs.

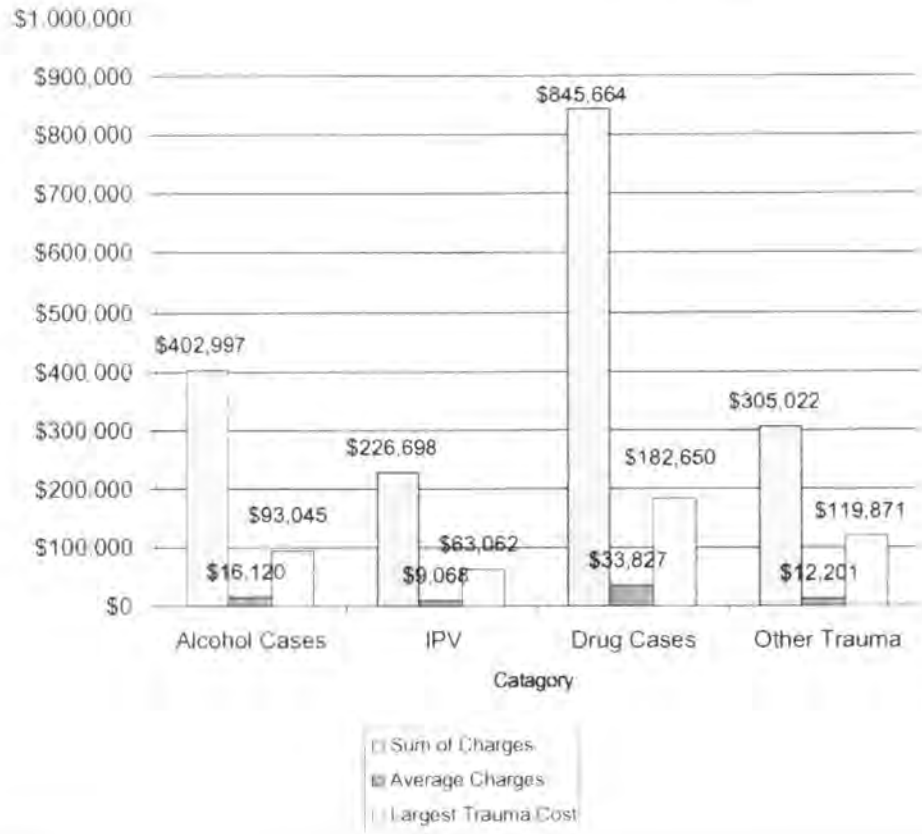
The average charges (Chart 2) for cases involving alcohol were $18,096.21. The costs of treatment ranged from $2,023.25 to $93,044.62. Among alcohol-related trauma patients, there were three major cost modalities. Sixty percent of patients' costs ranged from $1-$10,000, 16 percent ranged from $10,001-$20,000, and 12 percent ranged from $20,001-$40,000. Among alcohol-related trauma cases, most patients had private (36%) or public insurance (39%). The remainder (25%) was self-paying patients.

Other Trauma-Related Cases

"Other" trauma (OT) is defined as any other trauma which entered the ED and did not have alcohol or illegal substances in their system at the time of admission. This also excluded any IPV cases. A majority of these individuals were Hispanic (88%), 12 percent were of White, non-Hispanic origins. Forty-eight percent of the sample were between the ages of 18-24 or 31-40 years of age. The other half of the cases were between the ages of 25-30 or 31-50. The average age for other trauma cases was 36 years of age. The youngest case was 18 and the oldest being 57 years of age. While 80 percent of this sub-group was from El Paso, 16 percent of all cases were from out of state. Only four percent were from Hidalgo County.

Fifty-two percent of these trauma injuries occurred on the motorways. Trauma injuries at home comprised only 16 percent. A majority of these injuries were blunt (92%) with only 8 percent being penetrative. The mean ISS was 6, although they ranged from 1 to 24. The crucial distinction when examining ISS is as follows: 1-14 considers the patient to be stable and 15 to 75 are critical. The

Chart 2: Thomason Hospital Trauma Patient Cost Indicator Data, 2001



focus on ISS is that they reflect the probability of survival. Twelve percent had an ISS above 15. Eighty-eight percent had an ISS between 1-9.

The average costs were $9,067.91 with charges ranging from $400 to $63,061.72. Among OT-related cases, (40%) relied on private health insurance, 36 percent on public health insurance, the remainder was self-paying.

CONCLUSION

The current findings are tentative yet suggestive. There is a need for further social science research on IPV cases in border communities. Continuing and comparative studies need to be conducted. The criminal justice perspective needs to be augmented by public health and social service perspectives, as well. The main findings of this paper are:

Trauma data suggest that Border hospitals' TR admissions can identify and provide substantive, reliable data about IPV & other family violence issues. Since the problem is extensive, it is important to compare IPV cases to other types of injuries and trauma in these communities. IPV cases seem to be distinct from these other types of trauma. Yet, the IPV case sample is too limited to speak about trends. For example, the patterns for drug abuse cases seem to be increasing and alcohol abuse cases are decreasing. Yet marked profile differences may be observed when one compares IPV cases to other trauma (OT), drug cases and alcohol cases. IPV cases seem to be younger than OT, alcohol cases and drug cases. IPV cases are more likely to reflect OT cases and alcohol cases are more likely

to reflect drug use case patterns. While IPV ISS are comparable to OT and alcohol case's, they are half of drug cases. In terms of costs of trauma services, IPV average case costs are slightly less than OT, alcohol and drug trauma cases. In fact, IPV cases seem to be almost half of these data. Alcohol cases cost a third of the drug cases.

Only a few IPV patients had used either drugs or alcohol. It is unclear if their partner's had used drugs or alcohol. These data are outside the scope of trauma registry data collection protocols.

Yet among drug and alcohol cases use of other drugs is common, nonetheless one finds distinct patterns. Moreover, Blood Alcohol Concentration (BAC) levels seem higher among drug cases, than among alcohol cases or IPV cases. Most injuries for IPV occur at home or other locations. Yet for drug and alcohol cases the most common sites are motorways and other specified and unspecified places.

In short, there is tremendous potential in using TRs for IPV and related family violence research. Thomason's TR data allows for measuring IPV, as well as drug and alcohol-related violence. Illicit substances and alcohol use are captured in some TRs. This allows for measuring the extent of alcohol and drug use in TR cases. While tentative, this TR data suggest IPV trauma cases are distinct from illicit drug-related trauma, alcohol-related trauma but also other trauma. As pilot data, these differences need to be further studied and examined. There are limitations to the TR, but as collected today, they still could be used to help identify, profile and serve as baseline data for prospective studies.

- In Texas, TRs can be linked statewide to assess substance abuse if data is collected on a continuous basis. While some RACs collect substance abuse data, many have yet to focus on IPV and family-related violence. These data are not currently being reported to state trauma registries. TR data can capture the cost of trauma care services, we strongly urge that TRs include IPV data. This would allow for establishing cost of trauma care services to IPV cases on a statewide basis.
- Some RAC regions collect substance abuse data, others do not.
- In this pilot study substance abuse related IPV cases were lower than drug or alcohol categories. It is unclear if this is the case for other border communities or is the case for Hispanics throughout the state.

The data and approach presented herein needs to be compared to other data from other border hospitals. Border cities research may suggest which strategy is more likely to bear fruit and meet changing and future demands. Some effort needs to be spent on assessing and improving the quality of TR data as related to IPV, alcohol and drug abuse cases. TRs hold a major promise for ascertaining health consequences of IPV cases. We recognize the need not to oversell or overextend Trauma Center programs, staff and capabilities. However, this is a key cornerstone institution that allows us to measure serious health consequences of IPV behavior.

SUMMARY: THE NEED FOR A BORDER SUBSTANCE ABUSE IPV TR PROJECT

Just as there is a clear need to develop, cultivate, and evaluate drug abuse monitoring systems in Border communities, there is also a need for the data that will be generated by those systems to include Family Violence and IPV incidence, vulnerability and consequences. While this administration, like past administrations' has expressed an interest in Border drug abuse issues, public health issues have been left wanting. The need for Border public health surveillance and monitoring systems can be partially met by taking advantage of Border TRs.

Thomason Hospital's TR has suggested useful social indicators of drug abuse patterns and trends. This also applies to IPV and related manifestations of family violence. Moreover, closer examination of these data also suggest that pilot studies need to be undertaken to enhance and expand the validity and reliability of IPV data. Efforts must be undertaken to improve IPV TR case identification and followup. Perpetrator data has been clearly established for ED prospective studies, but have not been developed for border TR-wide systems. There is a need to establish collaborative projects along the Border to collect and analyze trauma data related to substance abuse and violence. These data can be useful in:

- Developing area and regional surveillance

systems
- •Establishing the need for and the range of services required for Border communities
- •Demonstrating the ways drug problems impact Border communities
- •Demonstrating the ways IPV and family violence impact Border communities
- •Demonstrating the costs related to substance abuse and IPV problems
- •Serving as a baseline for prevention and allowing for specialized studies of Border communities

Border Epidemiology Health Data Workgroups would benefit greatly by involving trauma registry programs and staffs in their efforts. While border-wide monitoring and surveillance projects have long been touted, Trauma Centers and TRs represent an improved operating vehicle to provide important monitoring and surveillance data. IPV baseline and trend data is lacking from the Criminal Justice System, Public Health System and social service agencies.

Most attention to violence in Border communities remains focused on drug-related, including narco-trafficking violence. In Border communities, public health concerns about IPV and related family violence issues have emerged as important state and federal public health policy and programming issues. To date, most programming has been limited to cursory outreach and educational campaigns. The seriousness of family violence in Border communities has yet to be adequately recognized by either the federal or state governments as a major public health initiative. Social Services and public health researchers have yet to conduct serious continuing and systematic IPV research as it concerns border communities and populations.

ENDNOTES

[1]Pollock, D. and P. McClain. 1989. Trauma registries. Current status and future prospects. *JAMA* 262 16: 2280-3. Hospital trauma registries are evolving rapidly as a result of a renewed focus on trauma care evaluation and recent advances in microcomputer technology. In theory, trauma registries can serve as the principal tool for the systematic audit of the quality of patient care provided by a hospital or a trauma system and as a potential source of part of the data needed for injury surveillance. In practice, however, there is a tendency to underestimate the resources needed to initiate and maintain a registry. Herein, we describe the purposes, resource requirements, and limitations of trauma registries.

[2]The *International Classification of Diseases* (ICD) is designed to promote international comparability in the collection, processing, classification, and presentation of *mortality statistics*. This includes providing a format for reporting causes of death on the death certificate. The reported conditions are then translated into medical codes through use of the classification structure and the selection and modification rules contained in the applicable revision of the ICD, published by the World Health Organization. These coding rules improve the usefulness of mortality statistics by giving preference to certain categories, by consolidating conditions, and by systematically selecting a single cause of death from a reported sequence of conditions. The single selected cause for tabulation is called the underlying cause of death, and the other reported causes are the non-underlying causes of death. The combination of underlying and non-underlying causes is the multiple causes of death. The ICD has been revised periodically to incorporate changes in the medical field. To date, there have been 10 revisions of the ICD.

[3]The Injury Severity Score (ISS) takes values from 0 to 75. If an injury is assigned an AIS of 6 (unsurvivable injury), the ISS score is automatically assigned to 75. The ISS score is virtually the only anatomical scoring system in use and correlates linearly with mortality, morbidity, hospital stay and other measures of severity. It's weaknesses are that any error in AIS scoring increases the ISS error, many different injury patterns can yield the same ISS score and injuries to different body regions are not weighted. Also, as a full description of patient injuries is not known prior to full investigation & operation, the ISS (along with other anatomical scoring systems) is not useful as a triage tool. (CDC 2003)

[4]Pollock, D. and P. McClain. 1989. Trauma registries. Current status and future prospects. *JAMA* 262 16: 2280-3. As of August 31, 1996, Section of 157.129 of the state trauma registry rule established Texas hospital standard data set requirements, TR case inclusion, and what constituted major trauma.

[5]These hospitals are William Beaumont Army Medical Center (WBAMC), Providence, Sierra, Las Palmas, Culberson, Del Sol Medical Center, Southwestern General and Thomason Hospital.

[6]The Texas counties are Hudspeth, Culberson, Presidio, and El Paso. The New Mexico Counties are Hidalgo, Luna, Grant, Dona Ana, Sierra and Otero.

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