

Methamphetamine use and violence among young adults

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Abstract

The current research analyzed the relationship between methamphetamine use and violence among young adults eighteen to twenty-five years old. Interviews were conducted with a sample of 106 respondents. The research was based primarily on in-depth, life-history interviews with individuals who used methamphetamine for a minimum of three months and who resided in Los Angeles County.

Of the 106 respondents, 37 (34.9 percent) 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. Overall, the 37 respondents reported fifty-four separate violent events while using methamphetamine. Of these fifty-four events, thirty-three (61.1 percent) acts of violence involved domestic relationships, nine (16.7 percent) of the violent events were drug related, seven (13 percent) were gang related, and five (9.3 percent) involved random acts of violence (e.g., road rage, stranger assault).

The findings suggest that methamphetamine use is a risk factor for violence. There was, however, no evidence of a single, uniform career path that all chronic methamphetamine users follow. Violence is not an inevitable outcome of even chronic methamphetamine use.

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Introduction

As national concern over crack wanes, public attention (media and political) is now riveted on an “even worse” drug, methamphetamine. According to Dr. Michael Abrams (1996) of Broadlawn Medical Center in Des Moines, who was quoted in a *New York Times* article on drugs in Iowa, “This is the most malignant addictive drug known to mankind. Crack, wicked as it is, cannot compare to the destructive power of methamphetamine.” 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.

Increases in methamphetamine use are apparent in a variety of indicators. Treatment admissions of persons with primary methamphetamine use problems increased from 21,000 in 1993 to 117,000 in 2003. Admissions to publicly funded treatment for methamphetamine in California increased 226 percent from 1992 to 1998 (Brecht, 2001) and 540 percent in Hawaii during approximately the same period (Wood, 1999). In the first six months of 2004, nearly 59 percent of substance abuse treatment admissions (excluding alcohol) in Hawaii were for primary methamphetamine abuse. San Diego followed, with nearly 51 percent. Notable

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increases in methamphetamine treatment admissions occurred in Atlanta (10.6 percent in the first six months of 2004, as compared with 2.5 percent in 2001) and Minneapolis/St. Paul (18.7 percent in the first six months of 2004, as compared with 10.6 percent in 2001).

Emergency department and medical examiner reports involving methamphetamine more than doubled during the 1990s (*Substance Abuse and Mental Health Services Administration, 2003*). There was also a steady increase in percent of arrestees testing positive for methamphetamine, e.g., a ten-fold increase in Omaha (*Herz, 2000; National Institute of Justice, 1999*). The percentage of adult male arrestees testing methamphetamine-positive in 2003 was highest in Honolulu (40.3 percent), Phoenix (38.3 percent), San Diego (36.2 percent), and Los Angeles (28.7 percent).

U.S. prevalence rates also indicate an increase in the use of methamphetamine. In 1997, methamphetamine use was estimated at 2.3 percent among twelfth graders; however, in 2004, that figure had risen to 6.2 percent (*National Institute on Drug Abuse and University of Michigan, 2005*). Overall, in 2004, an estimated 12 million persons (4.9 percent of persons aged twelve or older) had used methamphetamine at least once in their lifetime, 1.4 million (0.6 percent) had used it in the past year, and 600,000 (0.2 percent) had used it in the past month (*Substance Abuse and Mental Health Services Administration, 2005*).

The increasing trends in methamphetamine use are of particular concern because of its deleterious effects on individuals and related social costs. The attendant behaviors of methamphetamine use, which include high-risk sexual behaviors, injection use, and violence (*Frosch, Shoptaw, Huber, Rawson, & Ling, 1996; Molitor et al., 1999; National Institute on Drug Abuse, 2000; Reback & Grella, 1999*). 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*).

To date, methamphetamine use and its associated risk factors among adolescents and young adults had been understudied in the literature. Some studies, for example, had examined methamphetamine use behaviors in subgroups of homeless, runaway, street youth (*Gleghorn, Marx, Vittinghoff, & Katz, 1998*), and juvenile arrestees (*Pennell, Ellet, Rienick, & Grimes, 1999*), and treatment-seeking youth (*Rawson, Gonzales,*

Obert, McCann, & Brethen, 2005). *Rawson et al. (2005)*, for example, examined differences in participant characteristics and psychosocial factors between methamphetamine-using youth and a group of substance-using adolescents who did not use methamphetamine. Their results showed that more Whites and Latinos were categorized as methamphetamine users. In terms of age differences, holding sex and race constant, methamphetamine use was significantly highest among the late-adolescent group compared with the younger-aged groups. Results also showed that alcohol and marijuana initiation patterns tended to occur during the early teen years (i.e., ages thirteen to fourteen years), whereas the use of methamphetamine and other illicit drugs, such as cocaine, start during the mid- to late-teen years.

Pennell et al. (1999) described methamphetamine use behaviors among juvenile arrestees, including age of initiation and frequency of use, motivation, acquisition and distribution, and meth-related problems. Adolescent methamphetamine users were much more likely to experience greater levels of psychosocial dysfunction, including depression, auditory hallucinations, suicidal ideation, school and legal problems, as well as greater exposure to violence and abuse compared with non-methamphetamine users.

Some ethnographic work has explored methamphetamine use in its relationship to violent behavior. *Morgan's (1997)* study of methamphetamine use in San Francisco, Honolulu, and San Diego indicated 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*) suggested that methamphetamine users burn out even faster and often develop higher levels of paranoia than they experience with cocaine.

Overall, empirical evidence concerning patterns of violence is sparse, particularly its relationship to violence among young adults. The current project was designed to explore the relationship among methamphetamine use and violence among young adults.

Substance use and violent behavior

Among contemporary explanations of violence and aggression, few have been more enduring than the

presumed effects of intoxication from drugs or alcohol. Numerous empirical studies had reported associations between substance use and violent behavior. For example, drug abuse has been found to be a critical factor in homicide (Baskin & Sommers, 1998; Goldstein, 1989; Wolfgang & Strohm, 1956), robbery and other predatory crime (Baskin & Sommers, 1998; Chaiken & Chaiken, 1990; Johnson et al., 1985), and violence among adolescents (Bourgois, 1995; Fagan, 1989). The strong association between substance use and violence has been observed in a wide variety of sampling and measurement conditions including cross-sectional (Dukarm, Byrd, Auinger, & Weitzman, 1996), prospective (Farrington, 1991; Loeber, 1988) and retrospective (Wurmser & Lebling, 1983) studies; investigations of clinical samples as well as community samples (Cuffel, Shumway, Chouljian, & MacDonald, 1994). Other researchers, however, had suggested that the intoxication-violence relation was spurious rather than causal (Fagan, 1990; Parker & Auerhahn, 1998). In this view, a third factor or common cause underlies both crime and drug use. These researchers argued that studies had been unable to establish conclusively a causal ordering and might interpret as causal what might actually be reciprocal relations. Several studies (Elliott, Huizinga, & Ageton, 1985; White, Pandina, & LaGrange, 1987) found little evidence that drug use either precedes or follows crime, only that they tend to co-occur and are associated in frequency and severity.

How aggressive behavior is influenced by the ingestion of various substances is not well understood. Research on the nexus of aggression and substance use had found consistently a complex relation, mediated by personality factors, situational factors, and sociocultural factors that channel the arousal effects of substances into behavior types that may or may not involve interpersonal violence.

Substance use is hypothesized to increase violence generally of three theoretical grounds. Physiological and pharmacological explanations of the intoxication-aggression relation share the perspective that ingestion of drugs leads to changes in physiological or psychological functioning that, in a sober state, restrain behavior. Thus, the pharmacological actions of drugs may exercise a disinhibiting influence on individuals. For example, self-perceptions of personal characteristics (worthlessness, inadequacy) may be projected onto others toward whom they feel hostility, thus enabling them to displace the anger they feel toward themselves onto others. They will, however, not act on these impulses except when disinhibition of personal and social controls, such as through the use of drugs, permits (Wurmser & Lebling, 1983).

The disinhibition that permits the expression of violent impulses may be mediated by the effects of the intoxicating substances on cognitive functions (Fagan, 1990). Intoxication may have a disorganizing effect on cognitive functions, especially the ability to process cues of communication, and causes a general narrowing of the perceptual field. For example, intoxication may reduce an individual's ability to use various coping devices in situations seen as threatening (Fagan, 1990).

Another group of explanations for the positive relationship between drug use and violent behavior relates to differential association. Individuals who engage in drug use come into contact with people who participate in a wide range of deviant behaviors, including violence-related patterns. In the course of interacting with these individuals, individuals learn and are provided with the opportunities to express violent patterns. For example, research on adolescent problem behavior syndrome (Elliott, Huizinga, & Menard, 1989; Jessor & Jessor, 1977; Osgood, Johnston, O'Malley, & Bachman, 1988; Robbins, Bates, & O'Neal, 1962; Zucker, 1991) points to the salience of drug use patterns in explaining the persistence of problem behaviors into adulthood. Increasing engulfment in drugs seems to "tip" the scales from experimentation and *social* uses to addiction and commitment to violent street offending (Baskin & Sommers, 1998). Drug use tends to expand individuals' repertoire of street activities. It increases their contact with entrenched members of local drug markets—users and sellers—and, it expands their opportunities to participate in both these roles.

A current trend in criminological theorizing is to try to achieve increased explanatory power by integrating propositions derived from several earlier theories. The evidence from several disciplines suggests that individual attributes, both psychological and physiological, combine with cognitive and emotional factors that are interpreted through social-psychological contexts and situational factors to explain the relation between intoxication and violent behavior. The relationship between intoxication and violence is highly contingent, mediated by the set (compositions of persons), setting (social context), and substances that are consumed. For example, research on both drugs and alcohol suggests that individual behaviors vary by setting; that is, the same individual consuming the same substance will behave differently in different situations (Fagan, 1993). This variation is shaped by expectations and rituals found in a particular setting and may include social norms that either promote or impede aggression. Furthermore, cognition interacts with these social cues to produce an interpretation of the setting where drug

use or drinking takes place. And, personality variables affect the cues that trigger cognitive reactions.

Emerging from this perspective are a set of constructs that fall into four generic domains: (1) dispositional, (2) historical, (3) clinical, and (4) contextual (see Fig. 1; the

measurement of variables for each domain are discussed in the Methods section). The conceptual framework suggests that long-term influences (dispositional and historical) lead to the development of long-term, fairly stable, slowly changing differences between individuals

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- I. Dispositional factors
 - A. Demographic
 - 1. Age
 - 2. Gender
 - 3. Race
 - 4. Education
 - 5. Marital status
 - B. Childhood and adolescent development
 - 1. Fights
 - 2. Weapons possession
 - 3. Alcohol use
 - 4. Drug use
 - 5. Violence toward self
 - II. Historical factors
 - A. Social History
 - 1. Family history
 - a) Family type
 - b) Family deviance
 - c) Household violence
 - d) Child abuse
 - B. Substance use history
 - 1. Self-reported drug use (age of onset, frequency, method of administration)
 - 2. Prior violence while intoxicated
 - C. History of crime and violence
 - 1. Self-reported criminal offending
 - 2. Arrests
 - III. Clinical factors
 - A. Drug-related symptoms and problems
 - B. Social functioning

Fig. 1. Factors influencing substance-related violent events.

IV. Contextual factors

A. Attributes of the setting

1. Anonymity of actors
2. Type, amount, and rate of substance(s) consumed
3. Availability of weapons
4. Number of people

B. Transactional influences

1. Sequences of behavior that may escalate or contain aggressive interaction
2. Social coercion or pressures
3. Mutuality of violence

C. Cognition and situation arousal

1. Perception of threat, insult, fear
2. Interpretation of cues, provocation, or instigation

Fig. 1 (continued).

in their potential for violence. Superimposed on long-term between-individual differences in violence potential are short-term within-individual variations in violence potential (Farrington, 1998). The short-term variations depend on short-term motivating influences such as being intoxicated, bored, angry, frustrated, and on situational opportunities for violence. Faced with opportunities for violence, whether a person actually is violent depends on cognitive processes and the influence that intoxication has on perceptions.

Research methods

Sampling issues

The selection of individuals must address a common problem faced in criminological research, that is, balancing representativeness with concerns over low base rates. Criminological research that tests specific hypotheses often faces the problem of constructing samples that are both representative of the general population and inclusive of a significant number of active offenders. Two factors mitigated against this approach in the current study. First, the present research did not specify hypotheses, but attempted instead to construct and fit data to a conceptual framework for explaining drug-related violent events. The primary aim was to identify and analyze the pharmacological, social, and psychological processes that operate to bring about violence. Second, because the base rates of metham-

phetamine use and violent events were low and the population parameters unknown, the authors consciously traded off the external validity from representative samples for the internal validity of detailed information on individuals who exhibited behaviors of interest.

For these reasons, theoretical samples from populations of presumed offenders were preferable over general population samples. Theoretical sampling was used because empirical knowledge from previous studies directed the authors' efforts to locate potential informants in specific contexts and social areas, and to sample within known groups.

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 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 program. 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 three months, age eighteen to twenty-five) and arrangements were made for the interview. Once the initial pool of respondents was identified, they were asked to nominate or refer “someone like them” who also had been involved in methamphetamine use. Thus, the initial sample was comprised of treatment program participants and “chain referrals” (i.e., snowball sample) from these treatment respondents.

A broader community sample was recruited through advertising in local university newspapers. This tactic helped expand the sample to unknown members of the population who had no contact with formal treatment or criminal justice institutions. Chain referral or “snowball” sampling techniques also was used with this sample.

Interview protocol

The primary goal of this research was to capture thick descriptions of the relationship between methamphetamine use and/or sales and violent events. Depth interviewing was the most appropriate method to record information about specific events and to allow respondents to reflect on those events. The interviews were conversations about events and their contexts. 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 were not recognized beforehand by the researchers. The in-depth interview approach enabled the interviewers to pursue information about specific events, as well as provide an opportunity for respondents to reflect on those events. As a result, the interviewers were able to gain insight into the study participants’ attitudes, feelings, and other subjective orientations to their experiences.

A life history approach was used to describe initiation into methamphetamine use and/or distribution and their relationship to violence. Respondents were asked to describe how, where, with whom, and why they initially became involved in the behaviors of interest and their involvement in other criminal activities.

Detailed accounts of the violent events were obtained during interviewing. These data revealed the how, where, with whom, and why the respondents got involved in violent crime. A biographical approach was used to describe subjects’ experiences with violent

crime, weapons use, and the situated transactions of these events. In addition, respondents were asked to describe the relationship, if any, between the violent event and methamphetamine use and/or distribution including amounts of specific substances ingested prior to the time of the incident by the offender, victim, and any accomplices, and the state of intoxication or other drug states (e.g., ‘crashing’) manifested by these individuals prior to the event. A narrative account of how these drugs and drug states were related to the violent event was obtained.

Detailed life history information about prior involvement in drug use also was obtained during the interview. Each respondent was asked if they ever used a variety of specific substances (including marijuana, hallucinogens, inhalants, cocaine, crack, heroin, PCP, depressants, and alcohol), routes of administration, age at first use, and frequency of use in the twelve months prior to the instant offense. Complete drug treatment histories, including the number of times ever enrolled in specific type of treatment and detoxification programs, length of time enrolled in each type of program, ages at which treatment was received, reasons for entry into treatment, and factors that led to attrition from treatment, also were documented for each respondent.

Time reference points were used to assist in the recall of information. The method of sequencing the interview into intervals which are meaningful to the respondent has proven quite successful in collecting retrospective, longitudinal data covering long periods of time. The procedure requires that the interviewer work closely with the respondent to structure the period of interest, using corroborative information and memory aids (e.g., life events and associated dates from official records). In this way, criminal behavior patterns and displacement, shifts in the frequency or severity of criminal involvement (lulls, episodes, relapses after lengthy desistance periods), and contributing situational factors (peer group roles, legal or social sanctions, and life events such as the birth of a child or loss of a job) can be temporally anchored over a multi-year period to establish the natural history of criminal behavior and the factors that have affected its course.

Interview procedures

Several studies exploring the validity and reliability of self-reports had demonstrated that self-reported drug use and criminal behavior by individuals were generally quite accurate when obtained under assessment situations that were structured to minimize bias (Babor, Steinberg, Anton, & Del Boca, 2000; Del Boca & Noll;

2000; Killeen, Brady, Gold, Tyson, & Simpson, 2003). To minimize bias, 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, the interviewers avoided offices of either criminal justice agencies or clinical settings. The participants were given a generous travel allowance (\$10), regardless of the length or duration of their trip. A stipend of \$20 for the interview was paid at the conclusion of the interview, although it was not contingent on completion of the interview.

Each of the respondents were informed in detail about the nature of the study, its sponsor, sources of funding, goals and objectives, probable duration of the study, and the extent and time of participation. Before beginning the interview, a respondent must have definitely stated “yes” when asked if he/she gave his/her informed and voluntary consent to being a respondent in this study.

In this research, the quality and richness of the data depended largely on the skill of the interviewers. To this end, interviews were conducted by the principal investigators and by three trained drug research interviewers. Interviewer training was a three-day process that included a detailed description of the purposes and sponsorship of the research, procedures for confidentiality and informed consent, review of the interview protocol, and mock interviews. Interviewers were debriefed after each interview for the first two months of data collection and weekly thereafter. Interviews were conducted over a ten-month period.

Study measures

Dependent variable

As part of the interview, sample members were asked whether they had ever (lifetime measure) been violent while under the influence of methamphetamine. Violence was defined as any form of deliberate physical harm inflicted on another individual. Violence was coded as a dichotomous variable, the “no” category was the reference (excluded) group.

Independent variables

Dispositional factors

Demographic. Five demographic classifications were used in these analyses: sex, age, race, years of education, and marital status. (1) *Sex* was a dichotomy of male and female. In the dummy variable regression analyses, the female category was the reference (excluded) group. (2) *Age* was coded as a continuous variable. (3) *Race* had

four categories: White, Black, Latino, and Asian. In the regression analyses, Whites were treated as the reference group. (4) *Number of years of education* was coded as a continuous variable. (5) *Marital status* was a dichotomy of married/living as married and single (never married, divorced, separated, widowed). In the regression analyses, single was treated as the reference group.

Childhood and adolescent deviance. Lauritsen, Sampson, and Laub (1991, p. 239) concluded that “the stability of aggressive behavior patterns throughout the life course is one of the most consistently documented patterns found in longitudinal research.” One possible explanation of the continuity over time is that there are persisting individual differences in an underlying potential to commit aggressive or violent behavior. In any cohort, the people who are relatively more aggressive at one age also tend to be relatively more aggressive at late ages, even though absolute levels of aggressive behavior and violence are different at different age (Farrington, 1998). To examine the continuity of deviant and violent behaviors across the life course, four measures describing violent and substance use behaviors were utilized. Sample members were questioned about their involvement in deviant behaviors during their school (childhood and adolescent) years. Respondents were asked to indicate how frequently they were involved in (1) *fighting*; (2) *weapons possession*; (3) *alcohol use*; and (4) *drug use*. Self-reports were measured on a five-point scale (0=never to 4=frequently). In addition, sample members were asked if they ever physically harmed themselves in any way. *Violence toward self* was coded as a dichotomous variable (yes/no).

Historical factors

Family background. To provide measures of the extent to which sample members were exposed to parental deviance during childhood and adolescence, eight family background measures were included in the analyses. Scales and indices to measure family contributions to violent behavior were derived primarily from social learning theory (Fagan & Wexler, 1987). (1) *Family type* was a dichotomy of intact and single parent family types. In the dummy variable regression analyses, the single parent family category was the reference (excluded) group. (2) *Family arrest*. (3) *Family mental health problems*. (4) *Family drug use*. (5) *Family alcohol abuse*. (6) *Family drug use violence*. These were all dichotomous (yes/no) variables. In the dummy variable regression analyses, the “no” category was the reference (excluded) group. Sample members were asked about the extent to which their parents used physical violence during their childhood (birth to age sixteen). Separate

ratings were obtained for: (7) *violence between parents*; and (8) *childhood abuse*. Ratings were based on a five-point scale (ranging from 0=never used physical violence to 4=used physical violence frequently).

Substance abuse. Detailed life history information about prior involvement (i.e., lifetime) in drug use was obtained during the life history interviews. Each respondent was asked if they ever used eleven specific substances (including alcohol, marijuana, hallucinogens, inhalants, cocaine powder, crack cocaine, heroin, PCP, depressants, other narcotics, and methamphetamines), routes of administration, age at first use, frequency of use, and drug-specific violence. For the purposes of the present analyses, five measures were used: (1) *total number of drug-related violence events*; (2) *age of onset of methamphetamine use*; (3) *frequency of methamphetamine use*; (4) *number of months of methamphetamine use*; and (5) *method of administration of methamphetamines* (snort, smoke, inject).

Criminal offending. Sample members were questioned about their lifetime offending behavior. Respondents were asked to indicate if they had ever engaged in twelve different crimes, the age of initiation for each crime, and the frequency of involvement for each crime. In the current analyses, two indices of offending behavior were created. For each respondent, these included: (1) *total number of violent offenses* reported (assault, robbery, weapons possession, attempted murder, and murder); and (2) *total number of nonviolent offenses* reported (auto theft, shoplifting, fraud, and burglary).

Clinical factors

Drug problems. Sample members were asked if they had experienced any of thirteen drug-related problems while using methamphetamines. The thirteen 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. The analysis revealed two factors. The first factor seems to capture intrapsychic problems related to methamphetamine use. *Psychological problems* was an additive index comprised of five items that the respondent had experienced as a result of methamphetamine use: (1) depression; (2) paranoia; (3) hallucinations; (4) anxiety/irritability; and (5) sleeplessness. The second factor involved difficulties in social functioning and in fulfilling role obligations. *Social problems* was an additive index comprised of four items: (1) had trouble at school; (2) had trouble at work; (3) had family problems; and (4) had financial problems.

Contextual factors

For each methamphetamine-related violent incident reported, sample members were asked a series of open-ended questions about the circumstances of the violent event. The narrative descriptions provided by each respondent were coded in the following ways. (1) *Gender of the victim.* The gender of the victim was coded as either male or female. (2) *Relationship of the victim to the offender.* The relationship was coded as (a) stranger; (b) casual acquaintance; (c) close friend; (d) girlfriend/boyfriend; and (e) family member. (3) *Location of violent incident.* The situation in which the violent event occurred was coded as (a) public place, such as the street, park, outside a store; (b) a private party; (c) the sample member's home; (d) a friend's home; and (e) a relative's home. (4) *Involvement of others.* The extent to which the violent event involved peers or other people was coded as (a) alone; (b) while with friends; and (c) with other family members. (5) *Use of alcohol and drugs* (offender and victim). The use of alcohol and drugs, including methamphetamine, was coded for both the offender and victim at the time of the violent incident. (6) *Use of weapon.* The use of a weapon by the offender during the violent incident was coded as (a) none; (b) gun; (c) knife; and (d) other. (7) *Interactional processes.* In dispute-related violence, the distinction between offender and victim is not necessarily clear. In some instances it is more accurate to describe the offender and victim as two antagonists and then examine the routine activities that are likely to bring them together. In many cases, the actions of the offender is a function of the victim's behavior and the implications of that behavior for defending one's well-being or public self-concept. In the current analyses, the sample members were asked if their victims threatened, insulted, argued, and/or physically assaulted them before they engaged in violent behavior.

Study results

Sample

The sample contained fifty-five respondents (51.9 percent) in drug treatment and fifty-one (48.1 percent) active community methamphetamine users. The majority of respondents were male (59.4 percent), Hispanic (62.3 percent), high school graduates (83.0 percent), in their twenties (86.2 percent), possessing, on average, twenty-five months of work experience. The youngest respondent was eighteen years old and the oldest twenty-five; the median age was twenty-two years.

Most of the respondents worked in a legitimate job (83 percent). Approximately three in five respondents

(66 percent) worked in unskilled and semi-skilled occupations (e.g., clerical, sales, and factory jobs). Approximately 20 percent of the sample, however, worked in semi-professional and professional jobs (e.g., counselor, teacher).

Respondents reported that they were engaged in a wide range of criminal and deviant activities. Nearly all said they were experienced drug users. This was 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. Only 23 percent ($N=24$) of the sample, however, were ever arrested for a violent crime. Eighty-three percent ($N=88$) of the respondents were involved in nonviolent crime. 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 seventeen years of age.

Prevalence of methamphetamine-related violence

Of the 106 respondents, thirty-seven (34.9 percent) had committed violence while under the influence of methamphetamine. Males comprised two-thirds of the thirty-seven respondents ($N=24$). Of the total sample, 38 percent of males and 30 percent of females committed methamphetamine-related violence, respectively. Seventeen of the thirty-seven respondents who committed methamphetamine-related violence (45.9 percent) reported that they had never committed a violent crime prior to the methamphetamine-based events. Overall, the thirty-seven respondents reported fifty-four separate violent events while using methamphetamine. Of these fifty-four events, thirty-three (61.1 percent) acts of violence involved domestic relationships, nine (16.7 percent) of the violent events were drug related, seven (13 percent) were gang related, and five (9.3 percent) 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 percent) of the fifty-four violent events occurred in private homes, seven (14.3 percent) at parties, one (1.9 percent) at work, and eight (14.8 percent) in public settings (e.g., parks, street, roadways).

Behavioral and lifestyle characteristics associated with methamphetamine-related violence

To explore the types of factors that placed sample members at increased risk of committing violence, the association between methamphetamine-related violence and a series of behavioral and lifestyle characteristics were examined (see [Table 1](#)). The data revealed clear tendencies for risk of violence to be associated with individual adjustment and lifestyle, including measures of childhood and adolescent development (fighting, alcohol and drug use, weapons possession, and violence toward self), criminal activity, drug abuse, and psychological and social problems.

Comparisons of results for males and females showed similar patterns of statistical significance for both groups (not shown). Differences, however, did exist between the two groups. Females were more likely to exhibit psychological problems than males, while males were more likely to manifest social functioning problems. Males were more likely to engage in childhood and adolescent delinquent activities, while females were more likely to attempt to harm themselves. Furthermore, unlike the results for the total sample, family factors were statistically significant for male perpetrators of violence. Specifically, a history of family arrests and alcohol and drug abuse differentiated males from females. To a large extent, however, the results suggested that the factors associated with male and female methamphetamine-related violence were quite similar.

Predictors of methamphetamine-related violence

Regression analyses using SPSS helped to pinpoint the effects of each measure relative to others included in the model (see [Table 2](#)). When variables from all six categories of risk factors were simultaneously incorporated into the equation, only five variables remained as important predictors of violent behavior. Exposure to family deviance (arrests and partner violence), previous

Table 1

Associations between methamphetamine-related violence and measures of dispositional factors, historical factors, and clinical factors

	Methamphetamine-related violence	
	Yes (N=37)	No (N=69)
DISPOSITIONAL FACTORS		
<i>Demographic</i>		
Mean age	23.00	22.05 *
Percent Male	67.90	55.00
Percent White	42.90	28.60
Percent Black	3.60	8.20
Percent Hispanic	53.60	61.20
Percent other	0.00	2.00
Mean years education	11.61	11.95
Percent married	35.70	20.40
<i>Childhood and adolescent development</i>		
Percent fight	96.40	63.30 **
Percent weapons possession	46.40	21.70 *
Percent alcohol use	57.10	36.70 *
Percent drug use	96.40	76.80 *
Percent violence toward self	0.00	13.30 *
HISTORICAL FACTORS		
<i>Family history</i>		
Percent intact family	85.70	83.70
Percent family arrest	53.60	56.70
Percent family mental health problems	10.70	13.30
Percent family drug use	64.30	50.00
Percent family alcohol use	75.00	68.30
Percent family substance-related violence	25.00	23.30
Partner violence index	1.50	1.54
Child abuse index	1.14	1.20
<i>Substance use history</i>		
Percent alcohol	100.00	100.00
Percent marijuana	100.00	93.30
Percent inhalants	46.50	25.00 *
Percent LSD	82.10	51.70 **
Percent PCP	67.90	13.30***
Percent barbiturates	42.90	5.00***
Percent cocaine	81.30	73.20
Percent crack	78.60	38.30***
Percent heroin	10.70	0.00***
Mean age of onset (meth)	16.43	16.98
Frequency of meth use scale	3.46	2.92 **
Mean # years of meth use	4.46	3.13 **
<i>History of crime and violence</i>		
Violent crime index	2.18	1.40 *
Nonviolent crime index	1.89	1.33 **
CLINICAL FACTORS		
Psychological problems index	3.86	3.08 **
Social problems index	2.32	1.12 ***

* $p < 0.5$.** $p < .01$.*** $p < .001$.

substance-related violence, and social functioning problems significantly increased the odds of engaging in methamphetamine-related violence. Adolescent violence toward self decreased the likelihood of committing methamphetamine-related violence.

Separate analyses for males and females were conducted. The results indicated important similarities and differences in the risk factors for males and females. For both genders, a history of family arrest, problems in

Table 2

Summary of logistic regression coefficients for dispositional, historical, and clinical predictors of methamphetamine-related violence (N=106)

	B	p	Odds ratio
DISPOSITIONAL FACTORS			
<i>Demographic</i>			
Age	0.017	0.886	1.017
Sex	-0.352	0.720	0.704
Black	-0.465	0.382	0.431
Hispanic	0.605	0.542	1.832
Other	-0.453	0.975	0.636
Education	0.273	0.273	1.313
Married	-0.843	0.382	0.431
<i>Childhood and adolescent development</i>			
Fight	3.580	0.009	35.810
Weapons possession	-0.059	0.878	0.943
Alcohol use	-0.477	0.117	0.620
Drug use	0.011	0.968	1.011
Violence toward self	-4.640	0.003	0.010**
HISTORICAL FACTORS			
<i>Family</i>			
Intact family	0.837	0.396	2.309
Family arrest	6.670	0.031	0.187 *
Family mental health problems	-2.886	0.148	0.056
Family drug use	0.524	0.569	1.689
Family alcohol use	0.956	0.405	2.601
Family substance-related violence	-0.521	0.653	0.594
Partner violence index	0.443	0.002	1.526 **
Child abuse index	-0.317	0.176	0.728
<i>Substance use</i>			
Substance-related violence	2.349	0.001	10.479 **
Age of onset (meth)	-0.030	0.816	0.970
Frequency of meth use	-0.177	0.757	0.838
# years of meth use	-0.115	0.387	0.891
<i>Crime and violence</i>			
Violent crime	0.341	0.341	1.407
Nonviolent crime	0.025	0.959	1.026
CLINICAL FACTORS			
Psychological problems index	0.262	0.468	0.842
Social problems index	1.597	0.000	4.932 ***

* $p < 0.5$.** $p < .01$.*** $p < .001$.

social functioning, frequency of methamphetamine use, and involvement in crime (violent and nonviolent) were strong predictors of methamphetamine-related violence. Frequency of methamphetamine use and problems in social functioning, however, had more pronounced impacts on male violence as opposed to female violence. Two variables differentiated male and female violence. Length of methamphetamine use and family alcohol abuse predicted male violence, as opposed to female methamphetamine-related violence.

Situational or generalized violence

The primary goal of this research was to assess the relationship between methamphetamine use and violence. As discussed in the introduction, anecdotal evidence suggested that the use of methamphetamine leads to violent behavior. To understand this relationship, the temporal order of methamphetamine use and violence must be considered. Furthermore, if violence is a manifestation of methamphetamine use, the distribution of methamphetamine-related violence should differ from the distribution of non-drug violent acts.

As reported above, twenty of the thirty-seven respondents who committed methamphetamine-related violence (54.1 percent) reported that they had committed a violent crime prior to the methamphetamine-based events. Age of onset for methamphetamine use was compared with initiation ages for five violent crimes. For these twenty sample members, the mean age of initiating methamphetamine use was 16.19. The age of onset for assault for these respondents was 15.57, robbery (15.58), weapons possession (14.80), murder (16.17), and attempted murder (16.17). The age of onset for all five violent crimes was younger than the initiation age for methamphetamine use.

On the other hand, seventeen of the thirty-seven respondents who committed methamphetamine-related violence (45.9 percent) reported that they had never committed a violent crime prior to the methamphetamine-based events. Of these seventeen respondents, twelve were female and five were male. The seventeen sample members reported twenty methamphetamine-related violent events. Of these twenty violent episodes, eighteen (90 percent) were domestic in nature. The age of onset for methamphetamine use for these seventeen respondents was 17.77. Although these sample members did not report any previous violent crimes, they did engage in nonviolent crime. The average age of initiation for drug dealing (15.40), auto theft (13.00), and shoplifting (13.13) was significantly lower than the average onset age for methamphetamine use.

Table 3

Summary of significant factors differentiating methamphetamine violent subgroups (those with and without histories of violent crime)

	Previous violent crime	
	Yes (N=20)	No (N=17)
Sex (1=male)	85.7%	29.4%***
School fights	97.1%	75.05%**
School weapons	48.6%	10.0%***
School drug use	100.0%	70.0%***
Violence toward self	0.0%	15.0%**

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Mean comparisons of the seventeen sample members who engaged in methamphetamine-related violence but who had no history of reported violent crime were compared with respondents (N=20) who committed methamphetamine-related violence and also had histories of violent crime (see Table 3). The results indicated that childhood and adolescent development variables (school fighting, school drug use, school weapons possession, adolescent violence toward self) were the key factors that differentiated the two groups. In addition, the previous violent subgroup was more likely to be male. These results were fairly consistent with those for the entire sample. Adolescent and young adult deviance was the best predictor of methamphetamine-related violence.

Conclusions

The primary goal of this study was to assess the methamphetamine-violence connection. In summing up, it must be noted that the respondents were in some respect unusual. The authors did not seek to study the nature and extent of methamphetamine use and violence among the general population, for this strategy would have given one mostly respondents who merely experimented with the drug. Instead, the authors set out to find only those young adults who had used substantial amounts of methamphetamine over a long period of time. Thus, the findings must be understood as pertaining to this group of heavy users in the community.

Much of the evidence that links methamphetamine use with violence is based on clinical reports. Unfortunately clinical reports are replete with methodological problems. They are limited most severely by their inability to control for the non-drug state or trait characteristics of study patients. Temporal order questions predominate, and increased violence, observed in a drug abusing population, might as readily be attributed

to unspecified pre-morbid characteristics of that population as to drug pharmacology per se.

The results of this suggest that developmental factors are important contributors to violence. Previous research has shown that an aversive environment, family aggression, lack of parental supervision, and exposure to violence and substance abuse (Chermack & Giancola, 1997) are related to violent behavior. It has been theorized that the best predictor of future violence is a past history of violence. Accordingly, abnormal deviant behavior in childhood has been found to be a fairly reliable predictor of aggressive behavior in adulthood (Farrington, 1998). Findings from this study indicated that long-term influences—family (exposure to family deviance), psychological/personality, and peer factors (adolescent drug and alcohol use)—lead to the development of fairly stable, slowly changing differences between individuals in their potential for violence.

Superimposed on these long-term between-individual differences in violence potential were short-term within-individual variations in violence potential. Anger, frustration, and situational opportunities were short-term motivating influences for violence. For many of the sample members that engaged in violence, chronic methamphetamine use had a disorganizing effect on their cognitive functions. Perceptual fields were narrowed, which in turn, led to distorted interpretations of behavior and reduced an individual's ability to use various coping devices in situations seen as threatening.

Research on intoxication and violence 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 produces cognitive and mood alterations, but tends not to increase offensive-aggressive behavior. With increasing dose and long-term use, methamphetamine users tend to display psychological and physical deterioration, as well as changes in their social behavior. Correspondingly, chronic use tends to reduce impulse control and produce exaggerated defensive postures that deviate from a respondent's expected behavioral repertoire. It was important to note, that sample members also reported that high acute methamphetamine doses and bingeing often induced paranoia that was directly linked to aggressive and violent behavior.

Many people behave aggressively when under the influence of drugs. They, however, are more likely to behave that way if they also exhibit such behavior when

not on drugs (Fischman & Haney, 1999). While the study data supported this perspective, 46 percent of the study participants who committed violence reported that they had never committed a violent crime prior to the methamphetamine-based events. For these individuals, methamphetamine use produced a variety of effects ranging from irritability, hyperawareness, hypervigilance, and psychomotor agitation. Chronic methamphetamine intoxication produced a paranoid state, including frightening delusions that often resulted in aggressive acts. The nature of these acts overwhelming took the form of intimate partner violence.

It is apparent from these findings that methamphetamine use is a risk factor for violence. Everyone interviewed agreed that methamphetamine has clear abuse and violence potential. Almost all of the 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 there was 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, violence was not an inevitable outcome of even chronic methamphetamine use.

The findings suggested clearly that pharmacology is not destiny. As Fagan (1993) and Zinberg (1984) had 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 showed 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.

It will be important in future research to carefully disentangle the interactive factors that contribute to a specific violent act. For example, one of the current

controversies in clinical drug research is differentiation of substance abuse problems from other personality disorders. Accordingly, the etiology of compulsive intoxication also may be etiologically relevant to other types of personality or psychiatric disorders that, in turn, mediate aggression. Whether aggression follows intoxication depends in part on the psychological processes that either precede substance use or are intensified following use. The complexity of the interaction of substance abuse and personality disorders does suggest the need for longitudinal research that can trace their mutual development and interaction across time. Such research should include the following: severity, frequency, timing, and recency of violent behavior; precipitating life events, targets, location, context, and consequences; presence of psychiatric disorders and active symptoms; substance use and intoxication at the time violent behavior occurs; and subject's interpretation of violent episodes. The research should continue to take a life-historical approach in attempting to reconstruct the key influences on the identity formation and development of persons who later commit violent acts toward others.

In addition, it is recommended that researchers undertake primary data collection efforts to collect data on violent events among intimates. This research should examine the nature and status of the relationship between offender(s) and victim(s), the prerequisites of events, the motivations for dispute situations, sequential actions of the actors, weapon use, the role of third parties, the role of substance use (particularly methamphetamine), and the interactions of these domains.

The findings have important implications for interventions aimed at reducing methamphetamine use and violence. To the extent that offending trajectories can be delayed or reduced along the life course, interventions could work to prevent the subsequent development of substance use and violence. Delaying early onset of delinquent behavior is of critical importance in reducing opportunities for criminal escalation toward methamphetamine use and violence. The results suggest that interventions aimed at reducing social adversity and deviance in families can assist in altering the pathway to persistent offending. Additionally, efforts at developing critical thinking and problem-solving skills of adolescents would help reduce initiation into methamphetamine use and delinquent behavior.

Finally, the results suggest the importance of improving collaborative efforts across multiple intervention systems. Improving the early identification, case management and referral mechanisms across health and mental providers, substance abuse and domestic violence treatment programs, and criminal justice organiza-

tions is essential for reducing the negative health and social consequences of methamphetamine use.

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