Department of Health and Human Services
Public Health Service
National Institutes of Health
National Institute on Alcohol Abuse and Alcoholism

PROGRAM ANNOUNCEMENT
PA-93-095

RESEARCH ON RELATIONSHIPS BETWEEN ALCOHOL AND VIOLENCE

June 1993

PURPOSE

Alcohol is present in a significant proportion of violent events, including between one-half and two-thirds of all homicides and serious assaults (Wolfgang 1958; Pernanen 1976; 1991; Murdoch et al. 1990). Moreover, alcohol-related problems have been found disproportionately among both juvenile (White et al. 1987) and adult criminal offenders (Collins 1986). Nevertheless, understanding of the mechanisms by which alcohol influences violent behavior has been limited, largely because the causes are multifactorial and include interacting pharmacological, endocrinological, genetic, situational, environmental, and sociocultural determinants. Theoretical explanations of alcohol-induced violence have tended to focus on only one aspect of the problem, and in turn, efforts to prevent such violence have been hampered.

The National Institute on Alcohol Abuse and Alcoholism (NIAAA) invites research grant applications that advance understanding of the biological and psychosocial mechanisms underlying associations between alcohol consumption and interpersonal violence and that identify and test interventions to reduce and/or prevent alcohol-related violence and the alcohol-related sequelae of such violence. Of primary interest are studies that identify: (1) the individual and environmental conditions, situations, populations, and circumstances under which alcohol and violence are causally connected (see Pernanen 1981); (2) the sequential processes by which alcohol intake may lead to violent behavior and vice versa; (3) the physiological and neural mechanisms that mediate the relationship between alcohol and violence; (4) the behavioral consequences of alcohol-related violence, including subsequent alcohol abuse and violent behavior; and (5) interventions that may effectively reduce alcohol-related violence.

HEALTHY PEOPLE 2000

The Public Health Service (PHS) is committed to achieving the health promotion and disease prevention objectives of "Healthy People 2000," a PHS-led national activity for setting priority areas. This program announcement is related to the priority areas of reducing violent and abusive behavior (Chapter 7) and decreasing morbidity and mortality associated with the drinking of alcohol (Chapter 4). Potential applicants may obtain a copy of "Healthy People 2000" (Full Report: Stock No. 017-001-00474-0, or Summary Report: Stock No. 017-

001-00473-1) through the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402-9325 (Telephone: 202-783-3238).

ELIGIBILITY

Applications may be submitted by domestic and foreign nonprofit or for-profit organizations, whether public or private, such as universities, colleges, hospitals, laboratories, units of State or local governments, and eligible agencies of the Federal Government. Women and minority investigators are encouraged to apply. Foreign applicants are not eligible for First Independent Research Support and Transition (FIRST) Awards (R29s).

MECHANISM OF SUPPORT

Research support may be requested through applications for a regular research grant (R01), Small Grant (R03), or First Independent Research Support and Transition (FIRST) Award (R29). Applicants for R01s may request support for up to 5 years. The average direct cost per year for R01s is approximately $220,000. Small grants are limited to 2 years for up to $50,000 per year for direct costs. FIRST Awards must be for 5 years. Total direct costs for the 5 year period may not exceed $350,000 or $100,000 in any one budget period. FIRST and Small Grants cannot be renewed, but grantees may apply for R01 support to continue research on the same topic. Specialized announcements for the FIRST Award program (R29) and the Small Grant program (R03) are available from the National Clearinghouse for Alcohol and Drug Information (NCADI), P.O. Box 2345, Rockville, Maryland 20847-2345; telephone: (301) 468-2600 or 1-800-729-6686.

Annual awards will be made, subject to continued availability of funds and progress achieved.

AVAILABILITY OF FUNDS

While NIAAA desires to stimulate research in this area, no specific funds are being allocated for this program at this time. Applications received in response to this announcement will compete with others submitted to NIAAA for funding. The amount of funding available will depend on appropriated funds, quality of research proposals, and program priorities at the time of the award. In FY 1992 six grants relating to this program area, including both new and continuation awards, were funded for approximately $850,000 in total costs.

RESEARCH OBJECTIVES

Empirical and Conceptual Background

Epidemiological Evidence. Many studies over the past 50 years have found that alcohol is present in a high proportion of violent events including homicides and non-lethal physical and sexual assaults (see Collins 1981; 1989; Fagan 1990; Roizen and Schnerberk 1977; Murdoch et al. 1990; Pernanen 1991). Wolfgang's (1958) classic study of 588 cases of

homicide in Philadelphia found alcohol present in 64 percent of the cases, including 44 percent of cases where both offender and victim had been drinking. Other homicide studies in the U.S. (Voss and Hepburn 1968; Zahn 1991), Finland (Virkkunen 1974), and Sweden (Wikstrom 1992) reported similar rates of alcohol involvement by offender, victim, or both. Focusing on non-lethal violence, one study based on police reports determined that alcohol was involved in 33 percent of reported aggressive offenses, including 46 percent of assaults with injury, and 34 percent of common assaults (Gerson and Preston 1979). A recent study based on both interviews with a large representative sample of residents in a Canadian community and analysis of all police reports of violent episodes in that community during a 12-month period observed that alcohol was present in 42 percent of all violent crimes reported to the police and 54 percent of the most recent experiences of violence reported by respondents (Pernanen 1991). Thus alcohol is present in both the most extreme cases of violence and its more routine manifestations.

Drinking also has been frequently associated with sexual offenses. Scully and Marolla (1984) found that 75 percent of convicted rapists reported using alcohol or other drugs before the offense, and 44 percent asserted that the victim had used alcohol or drugs. In addition, acquaintance rape involves a high percentage of cases in which the perpetrator, victim, or both have been drinking (Richardson and Hammock 1991).

Research focused on violent offenders clearly indicates that they have higher rates of alcohol problems than the general population and are more likely than persons convicted of other offenses to report drinking just prior to their offense. One survey of 10,000 State prison inmates found that 50 percent of those imprisoned for a violent crime had been drinking just before committing that offense (Bureau of Justice Statistics 1983). Other studies have found a relationship between a history of problem drinking and a pattern of violent behavior (Virkkunen 1974; Mayfield 1976; McCord 1983). Collins' (1986: 111) review of the literature on criminal careers and alcohol use concluded that "offenders with drinking problems are disproportionately likely to have official records for and to self-report involvement in violent crime."

Other evidence suggests that acute drinking episodes, rather than chronic problem drinking, accounts for an elevated risk of violence. Collins and Schlenger (1988), after controlling for demographic and criminal history factors, found a direct relationship between the "acute" effects of drinking and incarceration for a violent offense but no such relationship for "chronic" alcohol effects. Similarly, Abram's (1989) study of the co-occurrence of antisocial personality, alcoholism, and drug disorders in a male jail population found that antisocial disorder was significantly associated with the number of prior arrests for all types of offenses but alcoholism alone was not. She suggests that the frequent association of alcohol and criminal violence may be an artifact of the association between alcohol and a third variable such as antisocial personality which is associated with violence but which rarely has been controlled in other studies.

Frequently, the victim as well as the offender has been drinking. Medical examiner studies typically find that between one-third and two-thirds of homicide victims have alcohol some in

their blood at the time of their death and half of these victims are intoxicated (Goodman et al. 1986; Abel and Welte 1989; Haberman and Baden 1978). Studies of sexual and nonsexual assaults also observe a high proportion of victims that have been drinking prior to the attack. One study of assault victims based on police reports (Gerson 1978) found that in 65 percent of the non-lethal assaults the victim had been drinking, including 29 percent in which only the victim was drinking. A survey of rape victims found that more than 40 percent reported consuming alcohol or being intoxicated just before the rape (Koss et al. 1988).

Many studies have found that alcohol-related violence varies with age, sex, socioeconomic status, and race/ethnicity of participants, as well as with the group size, victim-perpetrator relationship, time, location, and availability of a weapon. Males and young adults are more likely than other groups to have been drinking prior to being both perpetrators and victims of violence, whether lethal (Welte and Abel 1989; Goodman et al. 1985; Wolfgang 1958) or non-lethal (Pernanen 1991; Lowell and Gerson 1979). These studies also have found that homicide victims are more likely to have positive BACs when the killing occurred during the evening or night, on the weekend, in a bar, and when it involved a stabbing.

Several studies have observed two different patterns of alcohol-involvement associated with the location of violence and the victim-offender relationship (Lowell and Gerson 1978; Pernanen 1991). In marital assaults, drinking by the offender alone was the most common pattern, followed by more than a third of the incidents in which both parties were drinking, while drinking by the victim alone was rare. In contrast, in non-marital assaults the victim was much more likely to be the only person drinking, although the frequency of alcohol use by both participants also was high.

Most studies of spousal violence have found alcohol present in between a quarter and a half of these episodes, which usually involve wife battering (Hamilton and Collins 1981; Kantor and Straus 1987; Jacob and Leonard 1988). In a nationally representative sample of 5,159 couples, Kantor and Straus (1987) report that drinking occurred immediately before violence in 24 percent of the episodes of wife abuse. Characterizing the men by their usual pattern of alcohol consumption, they found that 19 percent of the infrequent drinkers but 48 percent of the frequent and binge drinkers were drinking at the time of the spousal violence. Leonard et al.'s (1985) interviews with 484 white male factory workers found that drinking in the past month was not associated with marital violence, but that a pattern of alcohol abuse over a longer period was.

Studies focusing on child abuse suggest that a large proportion of child abusers and incest perpetrators are problem drinkers, and that frequently the abusive parent is drinking prior to the abusive act (Browning and Boatman 1977; Famularo et al. 1986; Leonard and Jacob 1988; Widom 1989).

While most studies have focused on alcohol as an antecedent of violence, others have suggested that physical (Dembo et al. 1987; Downs et al. 1987) or sexual abuse during childhood (Peters 1988; Miller et al. 1990) contributes to subsequent alcohol abuse. For

example, Miller et al. (1990) compared alcoholic women in outpatient treatment with nonalcoholic women receiving some type of treatment and with a random sample of nonalcoholic women. They found alcoholic women were significantly more likely to have experienced both father-to-daughter severe physical violence and childhood sexual abuse than either comparison group.

The very limited data on the prevalence of and risk factors for elder abuse suggest it is associated with alcohol abuse by primary caregivers (Chance 1987; Pillemer 1986). The latter's case control study found that abusers were significantly more likely than the comparisons care takers to be reported to have a history of mental and emotional problems and to abuse alcohol.

Studies using aggregate level data also indicate the importance of alcohol consumption in explaining violent behavior. Evaluations of "natural experiments" report decreases in the level of violence when the supply of alcohol was temporarily interrupted by strikes (Takala 1973) and the closing of liquor outlets on Saturday (Olsson and Wikstrom 1982), and when it was affected over a longer period by rationing or significant price increases (Lenke 1982). Analogously, increases in availability, such as opening alcohol outlets in formerly "dry" areas, have generally resulted in increased violence. Several time series analyses of changes in rates of alcohol consumption and violent crimes also have found a fairly close connection between these rates in the Scandinavian countries (Lenke 1989; Skog 1987), although the connection varies by country.

Explanatory Frameworks. Explanations of the connection between alcohol indicators (i.e., use, misuse, and/or alcoholism) and violence have lagged behind accumulation of empirical evidence. Neither the mechanisms nor processes by which alcohol may lead to violence are well understood.

Several complementary explanatory frameworks for the alcohol-violence relationship have been proposed. One regards the actor as being "under the influence" of a pharmacological agent that causes physiological changes that may lead to aggressive or violent behavior. Such actions may be attributed either to the direct physiological effect of alcohol on cognitive processes or to the combination of physiological effects and other psychological or personality characteristics of the actor. This approach has been referred to as the psychological/psychiatric (Fagan 1990), pathological (Collins 1988), and disinhibition or "naturalistic" perspective (Pernanen 1991).

Within this broad approach, research focused on biological and physiological mechanisms has suggested that there are individual differences in alcohol's effects on aggressive behavior (Kelly and Cherek in press; Miczek et al. 1992). These individual differences may be determined by pharmacological, environmental and social variables such as the extent of alcohol exposure (i.e., dose, phase of acute intoxication versus chronic ingestion) or behavioral history in situations of conflict, as well as by genetic, hormonal, and physiological factors. For example, there is some evidence for a link between brain serotonin metabolism and aggressive behavior in alcoholics (Linnoila et al. 1983; Virkkunen et al. 1989). More

recently, a study has shown increased cortisol levels in alcoholics with a history of violent behavior, suggesting possible dysregulation of hypothalamic-pituitary-adrenal function after exposure to excessive amounts of alcohol (Buydens-Branchey and Branchey 1992).

Alcoholism and antisocial personality both have been found to have a strong genetic component, and these two disorders frequently co-occur (Schubert et al. 1988). Heightened aggressive behavior is one of many characteristics of antisocial personality disorder. However, whether there is a genetic linkage between antisocial personality, alcoholism, and violence remains unclear. Other studies have focused on etiological factors such as a behavioral history of aggression and violence, particularly in young males (Pulkkinen 1983; McCord 1983) or have described a drive to enhance one's sense of personalized power which in turn, may lead to use of violence in a conflict situation (McClelland et al. 1972).

Another group of investigators has conducted laboratory studies of direct aggression as an analog for physical violence, and have compared subjects' behavior while sober and intoxicated using various measures of aggression (Taylor and Gammon 1975; Taylor et al. 1979; Gustafson 1985 a and b; Cherek et al. 1985; Bond and Lader 1986). These studies generally have found that alcohol consumption increases aggressive behavior regardless of the particular experimental paradigm used (e.g., teacher-learner, competitive reaction time, free-operant aggressive responding). Alcohol-induced aggression is moderated, however, by many situational variables including the type and amount of alcohol consumed, the nature of the social context such as the presence of threat, frustration, aggressive cues or provocation, frequency and duration of provocation, effort required to retaliate, intervention by observers, or availability of a nonaggressive response alternative (Taylor et al. 1976; Bailey et al. 1983; Taylor and Leonard 1983; Kelly et al. 1988; Kelly et al. 1989; Gustafson 1991; Bushman and Cooper 1990). Furthermore, there is limited evidence of individual variation and sex differences in alcohol-mediated aggression (Cherek et al. 1985; Bushman and Cooper 1990). Explanations of the physiological and psychological mechanisms through which alcohol increases aggression focus on its effect on cognitive and attentional abilities, including reactions to cues of punishment and decreased response flexibility (Leonard 1989; Bushman and Cooper 1990; Pihl et al. 1984). These changes, in turn, affect communication, raising the probability of misinterpretation, perception of a threat, and interpersonal violence as a defensive reaction (Boyatzis 1977; Pernanen 1981; 1991).

The alternative sociocultural framework for explaining alcohol-related violence focuses on learned and shared expectations, beliefs, and behaviors, including those related to the use of alcohol and its effects on post-drinking behavior. MacAndrews and Edgerton (1969) showed that "drunken comportment" varies widely across cultures and, therefore, it cannot simply be a physiological response to alcohol. This finding, which challenges a "disinhibition" explanation of post-drinking behavior, has led to a variety of studies exploring the acquisition, nature, and effects of social norms or rules regarding drinking behavior and the situations in which various rules are applied.

Expectancy surveys have documented that there is a widespread view that drinking tends to increase interpersonal aggression and promote freer sexual expression (Roizen 1983; Brown

et al. 1980). Experimental studies using a balanced placebo design have demonstrated the potency of expectancies regarding what a person thinks is in his or her drink in shaping "drunken" behavior (Lang et al. 1975; Marlatt and Rohsenow 1980). Expectancies include alcohol-response expectancies, or beliefs about how drinking will affect behaviors directly, and response-outcome expectations, or views about how being intoxicated alters others' evaluations as well as the actual consequences flowing from behaviors exhibited while drinking. If people expect and tolerate drunken aggression in others, they are likely to adjust their behavior accordingly. This may result in avoidance or, alternatively, anticipatory aggressive acts. Such expectations vary, however, across cultures as well as according to characteristics of individual drinkers (e.g., drinking experience, gender, age), type and amount of beverage, and situational factors.

Recent research has shown that an individual's beliefs or expectancies about others' drinking status may serve as a permissive cue to increase aggressive responding or change an individual's judgments about sexual violence regardless of whether they consumed alcohol. Norris and Cubbins (1992) found that nondrinking men and women viewed an acquaintance rape as consensual sex when the participants were portrayed as drinking rather than sober, suggesting that the presence of alcohol may confer a permissive quality to a depiction of sexual violence. Similarly, George et al. (1988) demonstrated that a drinking woman was viewed as more sexually uninhibited than a nondrinking woman, possibly marking her as a target of unwanted sexual advances.

Alcohol expectancies arise through social learning. Several studies have found that children believe adults may behave in an uninhibited and aggressive manner when drinking and may avoid responsibility for such actions which are attributed to the effects of alcohol (Christiansen et al. 1982; Lang et al. 1992). Avoiding accountability for post-drinking behavior, a process sometimes labeled "deviance disavowal" (McCaghy 1968), even is incorporated in the criminal law which permits alcohol to mitigate punishment severity under certain circumstances. Data on actual sentence outcomes are limited, however, and alcohol may also be regarded as an aggravating factor (Felker 1989).

A meta-analysis (Bushman and Cooper 1990) of the psychological studies of aggression concluded that neither expectancy effects nor pharmacological effects alone determine the occurrence of aggression. Each may contribute, depending on situational factors such as the amount consumed, provocation, and attributional effects.

Various environmental or sociocultural contextual factors including the normative environment, immediate social setting, and situational variables may promote or impede aggression. For example, the number of persons present, the nature of their relationships, and the formal and informal social rules prevailing in the setting affect drinking behavior and whether it is viewed as "aggressive" (Burns 1980; Roman 1981).

Pernanen's (1991) study illustrates the key role of norms in shaping drunken behavior. He found that rather than being indiscriminate, behavior while intoxicated was guided by social rules such as those related to gender. For example, whether drunk or sober, when men

assaulted other men they were more likely to punch their victims; when they assaulted female victims, they were more likely to slap them.

Existing theories for explaining the role of alcohol in violence are incomplete. The psychological or disinhibition perspective generally fails to account for social processes. The sociocultural perspective treats the intoxicated person as a passive object, ignoring individual motivation and orientation to the situation, and adaptation to interactional processes. Thus, theoretical models that bridge these frameworks are needed.

Design Methodology

Many conceptual and measurement problems have hampered research on the alcohol-violence relationship (Greenberg 1981; Roizen and Schnerberk 1977). Most studies have failed to specify the nature of relationships being tested. Since alcohol use does not inevitably result in violence, researchers must determine whether the relationship is causal but conditional, interactive, or conjunctive, (and identify the particular situations, circumstances, or conditions under which violence arises) or whether the association is spurious (statistical rather than causal) (Pernanen 1981). Few have tested multidisciplinary models such as those proposed by Fagan (1990), Collins (1988) and Pernanen (1991) or have considered the extent to which the relationships are reciprocal or bidirectional.

Other frequent methodological shortcomings include the following: diverse definitions of "violence" and "alcohol abuse"; biased samples, particularly those based on prison or treatment populations; inadequate measures of drinking, including failure to distinguish between acute or chronic alcohol effects and reliance on a single measure of alcohol consumption; failure to control for conditional variables such as personality traits, contextual effects, and post-drinking norms; failure to identify or distinguish subgroups of alcohol users and violent offenders; inadequate conceptualization of the research question; and the absence of control groups (Greenberg 1981; Pernanen 1981). These issues are critical and must be addressed through appropriate designs.

If applicants do not have the full range of methodological and technical skills requisite to the design and analysis of the proposed research on alcohol-related violence they are strongly encouraged to consult with statisticians and other methodologists to assure access to appropriate expertise. Applicants may employ multifaceted or singular research methodologies of any scientific discipline that may be appropriate to addressing the research question.

Areas of Research Interest

A variety of theory-based studies are needed to systematically explore linkages among psychological, situational, and sociocultural factors that may contribute to or reduce the occurrence of alcohol-related violence. Researchers may focus on identifying: (1) the individual and environmental conditions, situations, populations, and circumstances under which alcohol and violence are causally connected (see Pernanen 1981); (2) the sequential

processes and mechanisms through which alcohol and violence are linked; (3) the behavioral consequences of alcohol-related violence, including subsequent alcohol abuse and violent behavior; (4) the neurobiologic, pharmacologic and physiologic mechanisms that mediate the relationship between alcohol and violence; and (5) interventions that may effectively reduce alcohol-related violence.

Diverse designs, methodologies, and disciplinary approaches are welcome from investigators in relevant fields such as psychology, sociology, anthropology, criminology, epidemiology, health education, and other relevant disciplines. Research may employ laboratory experiments, surveys, observations in natural or quasi-natural settings (e.g., bars), analyses of official records or secondary analyses of other existing data sets. They may evaluate programs designed to reduce alcohol-related violence, as appropriate to the research question. The use of multiple methods and development of multidisciplinary research teams are highly desirable. Depending on the research question, it also may be useful to add questions to existing ongoing longitudinal studies for subsequent analysis.

Prevention research not only measures the effectiveness of interventions per se, but includes domains of pre-intervention research related to the causes and nature of alcohol-related violence that may inform development of programs and policies to reduce or prevent it. Basic neurobehavioral research seeks to explore the neurobiological, pharmacological, and physiological mechanisms underlying violent behavior and the effects of genetic and environmental factors on animal and human behavior in the presence of alcohol. Across this broad spectrum of research opportunities are methodological issues and techniques requiring in-depth attention from investigators. Research topics relevant to this announcement include but are not limited to the following areas:

Basic research on biological and physiological mechanisms. While correlational methods in humans have implicated neurochemical, neuroendocrinological, and neurophysiological mechanisms in the mediation of alcohol's effect on violent behavior, more controlled animal studies are needed to identify the discrete brain mechanisms underlying distinct types of aggressive behavior and their interrelationship with genetic, environmental, and social variables contributing to violence. Models of offensive, defensive, and dominant/submissive behavior have been developed in several species including mice, rats, cats, and primates (Blanchard and Blanchard 1989; Brain 1986; Winslow et al. 1987; Miczek et al., in press). Using these models, investigators have demonstrated the relevance of the benzodiazepine/GABA-A receptor complex to alcohol-induced aggression (Weerts et al. 1992; Weerts et al. in press).

Serotonin has been implicated in the mediation of alcohol-induced aggression (Linnoila et al. 1983; Virkkunen et al. 1989), but the relationship between aggressive behavior and serotonergic mechanisms is not clear. For example, animal studies have shown that, in general, 5-HT receptor agonists reduce aggressive behavior, but this depends on the particular behavioral paradigm used in a selected species (see Miczek et al. 1989; Olivier et al. 1989 for reviews). However, whether the antiaggressive effects are due to selective 5-HT receptor agonist properties needs to be confirmed with studies using specific receptor

antagonists. Multiple-neurotransmitter modulation is more likely for complex behaviors such as alcohol-induced aggression. Thus, more research is needed on the precise role of a number of neurotranmitter systems in specific types of alcohol-induced aggressive behavior (e.g., offensive, defensive, predatory) and in various species.

Direct experimental studies in male mice, rats, and squirrel monkeys have shown that the alcohol-androgen interactive effects on aggression are the result of testosterone's action on brain targets and not on peripheral sites (Debold and Miczek 1985; Winslow et al. 1987). Female aggressive behavior, however, appears to be under a different form of hormonal control (Winslow et al. 1987; Lisciotto et al. 1990). Thus, the actions of alcohol on neuroendocrine events that control testosterone and adrenal hormones are a ripe area for elucidation of the mechanisms of sex differences in alcohol's aggressive-enhancing behavior. Animal behavioral studies may also shed light on differences between males and females as perpetrators or victims of violence while under the influence of alcohol.

Systematic studies in animals of gene-environment interactions are very important for understanding individual differences in alcohol-induced aggression. A promising area of research includes investigations using animals selectively bred for high alcohol preference or for high levels of aggressive behavior (Tuominen et al. 1990; Weerts et al. 1992).

Studies of the genetic linkage between antisocial personality, alcoholism, and violence remain a potential area for examination.

Pre-intervention studies of behavior, cognition and expectancies. Many questions arise regarding how alcohol alters behavior, including aggression, by affecting the processing of social information. How does alcohol modify the perceptions of cues interpreted as aggressive? In what situations do people perceive and selectively attend to violent aspects in their environment? How is this altered by drinking? How does alcohol alter affective responses, particularly such emotions as anger and fear?

Alcohol-expectancy research might address such questions as: (1) How, at what age, and through what sources do children develop expectancies that associate alcohol and violence, if at all? What are the roles and relative contributions of the family, school, peer group, and mass media in shaping such expectations? (2) How do alcohol-related behavioral expectancies regarding post-drinking aggression vary among different age, sex, socioeconomic status, and ethnic groups? (3) How are post-drinking expectancies affected by different alcoholic beverages, the manner of drinking, the individual's drinking history, pre-existing aggressive inclinations and personality traits such as impulsivity and dominance, and the characteristics of other drinkers? (4) To what extent do people perceive drinking as increasing their own risk of victimization? Increasing the risk of victimization to others? (5) How does the use of alcohol by others affect perception of permissive versus nonpermissive cues? Although limited research has identified the "deviance disavowal" process by which drinkers shift blame for post-drinking behavior to the alcohol, further research might: clarify

uses and possible meanings of the concept; and determine how, when, and by whom drinking is used to justify violent behavior or mitigate the punishment for it.

Experimental studies might focus on specific manipulation of alcohol dose effects (e.g., using doses higher than have been tested heretofore since no study has tested dose effects producing blood-alcohol levels in excess of 0.10 percent), variations among subjects (particularly gender differences and personality characteristics), and the circumstances affording an opportunity for aggression (e.g., the timing of intoxication and effect of acute tolerance resulting in reduced impairment within a drinking session). They might examine the effects of social and contextual factors on individual differences in responses to alcohol's effects in specific settings. Experiments involving female subjects will have to screen those subjects for pregnancy and alter the dose appropriately.

It might be useful to replicate and expand Pernanen's Thunder Bay, Canada community study in a U.S. city with a larger, more heterogeneous population and high violent crime rate to explore a wider range of interactions involving diverse types of violence. Such a replication would address important questions related to the generalizability of the findings of the only community-wide study of alcohol-related violence.

To facilitate understanding of how the intoxicated individual actively shapes the outcomes of interactions in social situations, researchers might directly observe natural episodes of such behavior. Such episodes are likely to differ because there are wide differences in norms regarding drunken behavior across groups and societies. Because there are few systematic comparisons of individuals' efforts to orient themselves while intoxicated across different demographic subgroups (e.g., age and gender) or subcultures (e.g., various ethnic groups residing in the U.S.), such observational studies might focus on depicting intoxicated social interaction in various subcultural and demographic groups and locations in which they drink and the role of group norms in shaping behavior.

Study of a fuller array of types of aggressive episodes could help identify the sequence of events that precipitate or avert the escalation of conflict into violence. Incidents of anger, threat, and other displays of non-physical aggression might be sampled to explore the stages of the development of a conflict, documenting the sequence of events prior to the precipitation of a violent act or its absence, the role of alcohol in the instigation phase of conflict, the perspectives of both offender and victim, and the factors that differentiate between instances of verbal aggression that did and did not end in violence. Victimization surveys also might be useful in this effort if they were expanded to include several questions related to the presence of alcohol in violence episodes.

To learn more about the most serious alcohol-related violent episodes, it might be instructive to conduct in-depth interviews regarding the expectancies and experiences of those incarcerated for such acts. Do offenders see a relationship between their use of violence and drinking? How do they explain their use of violence? Do they blame the victim? The alcohol? Themselves?

The high proportion of violent offenders with both alcohol problems and other comorbid psychiatric symptoms suggests the need for further research to distinguish the contribution of alcohol to their violence and to determine the extent to which efforts to treat alcohol problems are likely to reduce violent behavior among these populations.

Pre-intervention studies of the social and environmental context. Research is needed on the effects on behavior of factors in the immediate social and physical environment in which alcohol is used including the normative environment, the immediate social setting, and situational factors such as the number of persons present, nature of relationships, and the presence and types of social controls (Roman 1981).

Specific social contexts in which the intoxication-aggression relationship is well established might include bars and fraternities (Martin and Hammer 1989). Bar studies might explore how the clientele, neighborhood, management practices, and physical setting affect the rate of violence, thereby suggesting the most effective points and modes for intervention. Studies of fraternities might examine expectancies and behaviors embedded in the organizational system that contribute to alcohol-related sexual violence or test strategies to more effectively reduce it.

Other studies of social contexts might focus on specific group settings (e.g., youth gangs) and relationships (e.g., spouses) in exploring the effects of the assailant-victim relationship, the role of witnesses, their likelihood of intervening, and the effect of intervention on injury in episodes of violence with and without alcohol.

Since the police may play a crucial role in defusing (or provoking) violent encounters, as well as in defining the limits of bystanders' intervention, researchers might explore police attitudes and behavior toward drunken individuals and the types of conflicts, situations, and contexts in which they are most likely to intervene.

Researchers also might examine salience of social controls in various contexts by comparing violence rates in communities that vary by social structural dimensions and informal social controls (e.g., a Mormon community compared to a religiously heterogenous one). They might assess relationships between the geographic density of public drinking places or liquor outlets and violence and attempt to identify the role that alcohol plays in that violence. Multiple methodologies could be applicable including ethnography, neighborhood surveys, analysis of police records, and interviews.

One important special context for alcohol-related violence is the family. Research is needed on the role of alcohol in abuse against children, spouses, and the elderly. Researchers might explore the intergenerational transmission of both alcohol problems and violent behavior among individuals and families with a history of these problems to identify the independent and interactive effects of exposure to alcohol problems and violence.

Studies focused on spouse abuse might include: (1) general population surveys to identify sociodemographic and other characteristics of groups in which high rates of abuse are found

and the developmental stages in relationships in which drinking patterns are most strongly associated with marital violence; (2) studies of episodes of naturally occurring marital violence through in-depth interviews; and (3) experimental studies of factors affecting communication between spouses as they interact after one or both receive alcohol, a placebo beverage, or no alcohol.

Evidence, suggesting that persons abused as children or exposed to violence in the home subsequently become dependent on alcohol and other drugs, indicates the need for further studies of the role of violence in the origin of alcohol problems and the development of interventions to address this risk factor.

The paucity of existing data and findings that there may be a connection between caretakers' alcohol problems and violence against their elderly wards suggests the value of examining the contribution of alcohol to elder abuse.

Aggregate level studies of legal and policy effects. Changes in the law and other public policies provide "natural experiments" through which to examine alcohol-related violence. Time series analyses might assess, in a given State or jurisdiction, the effects of changes in alcohol availability (e.g., alterating the times and locations for the purchase of alcoholic beverages and minimum age of purchase) or shifts in levels of enforcement of laws regulating availability (e.g., the sale of alcohol to underage patrons). Alternatively, researchers might compare differences in rates of reported interpersonal violence in "wet" versus "dry" counties in the same State and the apparent role of alcohol in the reported violence rates.

Research is needed on the effects of the involvement of alcohol in violent episodes on the willingness of various participants to invoke and apply the criminal law and on public perceptions of its deterrent effects. Does the presence of alcohol reduce the deterrent effects of the criminal law? Does alcohol affect the likelihood that police will be notified of violent behavior? Does it alter their willingness to make an arrest? The prosecutors' willingness to press charges? Determinations of guilt by judges or juries? The severity of sentencing outcomes? In what types of cases is drinking treated as a mitigating circumstance? Is alcohol also treated as an aggravating circumstance? How does drinking by the victim affect case outcomes?

Prevention/Intervention Research. School based anti-drug and safety education programs often inadequately address the role of alcohol in violence. Researchers might develop and test new materials appropriate for various age/grade levels that address alcohol's effect on judgment and the increased likelihood of victimization after drinking.

Assessments of the effectiveness of interventions particularly appropriate for high school and college students might focus on programs designed to reduce the incidence of rapes and assaults. Some of these programs might explore the sexual expectancies associated with alcohol consumption and provide accurate information about situations predictive of alcohol-related sexual assault (Abbey and Thomson 1992).

Because prisoners have high rates of alcohol-related problems, it would be useful to implement and evaluate therapeutic interventions with this population, particularly those whose offending is secondary to their alcoholism. NIAAA support must be limited, however, to research on these issues.

Interventions to be tested in bars, particularly those where violence is frequent might include: server training to create a safer drinking context; routine police patrol; and alteration of the drinking environment through changes in lighting and decor, type of music, and availability of food.

Public service messages and community-wide campaigns similar to those that appear to have been effective in reducing drunk driving could be developed and tested, particularly in communities with high rates of alcohol-related violence.

Outcome measures commonly used to assess the effectiveness of such alcohol control policies as excise taxes and changes in the minimum age of purchase include changes in rates of fatal auto crashes and cirrhosis deaths. Rarely have rates of homicides, assaults, or emergency room admissions been employed, despite frequent and consistent findings of alcohol-involvement in these events. Researchers might wish to examine whether such indicators of violent behavior could be employed as alternative outcome measures in alcohol prevention studies and evaluations of intervention programs and, if so, how these rates have changed over time and with policy alterations.

Cross-Institute/Center Areas of Interest

Projects may be submitted under this announcement that address issues in common with, for example, the National Institute on Drug Abuse (NIDA) and the National Institute of Mental Health (NIMH). Applicants also may wish to collaborate with the Center for Substance Abuse Prevention (CSAP) or Center for Substance Abuse Treatment (CSAT) grantees who deal with the types of environmental and social factors addressed by this announcement. It is possible that an applicant could conduct the research in the context of a CSAP Community Partnership grant, a CSAT Target Cities grant, a CSAP High Risk Youth grant which could provide a potential applicant with a pool of clients and a primed community. Preapplication consultation with the individuals listed under the Inquiries section is strongly encouraged. Applications are considered for acceptance and assigned according to standing NIH/PHS referral guidelines.

International Comparative Studies

It is recognized that some alcohol-related prevention research issues related to such areas as violence reduction programs lend themselves to comparative multi-site study, especially where environmental differences are concerned. Well-designed comparative multi-site studies may include program sites in foreign countries, provided that the foreign program site is justified in terms of the research objectives. Such studies may include a collaborating

scientist or clinical researcher affiliated with the foreign program sites. However, foreign institutions are not eligible for FIRST Awards (R29s).

STUDY POPULATIONS

National Institutes of Health (NIH) Policy Concerning Inclusion of Women and Minorities as Subjects in Research

Applications for grants and cooperative agreements that involve human subjects are required to include minorities and both genders in study populations so that research findings can be of benefit to all persons at risk of the disease, disorder, or condition under study: special emphasis should be placed on the need for inclusion of minorities and women in studies of diseases, disorders, and conditions which disproportionately affect them. This policy applies to all research involving human subjects and human materials and applies to men and women of all ages. If one gender and/or minorities are excluded or are inadequately represented in this research, particularly in proposed population-based studies, a clear, compelling rationale for exclusion or inadequate representation should be provided. The composition of the proposed study population must be described in terms of gender and racial/ethnic group together with a rationale for its choice. In addition, gender and racial/ethnic issues should be addressed in developing a research design or sample size appropriate for the scientific objectives of the study.

Applicant/offerors are urged to assess carefully the feasibility of including the broadest possible representation of minority groups. However, NIH recognizes that it may not be feasible or appropriate in all research projects to include representation of the full array of United States racial/ethnic minorities populations (i.e., American Indians or Alaskan Natives, Asian/Pacific Islanders, Blacks, and Hispanics). However, investigators must provide the rationale for studies on single minority population groups.

Applications/proposals for support of research involving human subjects must use a study design with minority and/or gender representation (by age distribution, risk factors, incidence/prevalence, etc.) appropriate to the scientific objectives of the research. It is not an automatic requirement for the study design to provide statistical power to answer the questions posed for men and women and racial/ethnic groups separately; however, whenever there are scientific reasons to anticipate differences between men and women, and racial/ethnic groups, with regard to the hypotheses under investigation, applicants should include an evaluation of these gender and minority group differences in the proposed study. If adequate inclusion of one gender and/or minorities is impossible or inappropriate with respect to the purpose of the research because of the health of the subjects, or other reasons, or if in the only study population available, there is a disproportionate representation of one gender or minority/majority group, the rationale for the study population must be well explained and justified.

The NIH funding components will not make awards of grants, cooperative agreements, or contracts that do not comply with this policy. For research awards which are covered by this

policy, awardees will report annually on enrollment of women and men, and on the race and ethnicity of subjects.

PROTECTION OF HUMAN SUBJECTS

The Department of Health and Human Services (DHHS) has regulations for the protection of human subjects which include additional regulations for the protection of prisoners. A copy of these regulations (45 CFR 46, Protection of Human Subjects), including those pertaining specifically to prisoners, are available from the Office of Protection from Research Risks, National Institutes of Health, Bethesda, MD 20892, telephone 301-496-7041. Specific questions concerning protection of human subjects in research may be directed to the staff member listed under "Inquiries."

An applicant organization proposing to conduct nonexempt research involving human subjects must file an Assurance of Compliance with the Office for Protection from Research Risks (OPRR). As part of this Assurance, which commits the applicant organization to comply with the DHHS regulations, the applicant organization must appoint an institutional review board (IRB) which is required to review and approve all nonexempt research activities involving human subjects.

APPLICATION PROCEDURES

Applications must be submitted on the grant application form PHS 398 (revised 9/91) and will be accepted at the standard application deadlines as indicated in the application kit.

Application kits are available from most institutional business offices or from the Office of Grants Inquiries, Division of Research Grants, Westwood Building, Room 449, National Institutes of Health, Bethesda, MD 20892, telephone 301-594-7248. The number and title of the announcement must be typed in item number 2 on the face page of the application.

FIRST applications must include at least three (3) sealed letters of reference attached to the face page of the original application. FIRST applications submitted without the required number of reference letters will be considered incomplete and will be returned without review.

The completed original and five (5) permanent, legible copies of the PHS 398 form must be sent or delivered to:

Division of Research Grants, NIH
Westwood Building, Room 240
5333 Westbard Avenue
Bethesda, MD 20892 *

* If an overnight carrier or Express Mail is used, the Zip Code is 20816.

REVIEW PROCESS

The Division of Research Grants, NIH, serves as a central point for receipt of applications for most discretionary PHS grant programs. Applications received under this announcement will be assigned to an Initial Review Group (IRG) in accordance with established PHS Referral Guidelines. The IRG, consisting primarily of non-Federal scientific and technical experts, will review the applications for scientific and technical merit. Notification of the review recommendations will be sent to the applicant after the initial review. Applications will receive a second-level review by an appropriate National Advisory Council, whose review may be based on policy considerations as well as scientific merit. Only applications recommended by the Council may be considered for funding. Small Grants (RO3s) do not receive a second level review.

REVIEW CRITERIA

Criteria for scientific/technical merit review of applications for regular research grants (R01) will include the following:

1. The overall scientific and technical merit and significance of the proposed research.

2. The appropriateness and adequacy of the experimental design, including the adequacy of the methodology proposed for collection and analysis of data.

3. The adequacy of the qualifications and relevant research experience of the principal investigator and key research personnel.

4. The adequacy of facilities and general environments necessary for the conduct of the proposed research, other resources, and any collaborative arrangements necessary for the research.

5. The appropriateness of budget estimates for the proposed research activities.

6. Where applicable, the adequacy of procedures to protect human and animal subjects.

7. Conformance of the application to the NIH policy on inclusion of women and minorities in study populations.

The review criteria for Small Grants (R03) and FIRST Awards (R29) are contained in their program announcements.

AWARD CRITERIA

Applications recommended by a National Advisory Council will be considered for funding on the basis of overall scientific and technical merit of the research as determined by peer review, program needs and balance, and availability of funds.

TERMS AND CONDITIONS OF SUPPORT

Grant funds may be used for expenses clearly related and necessary to conduct research projects, including both direct costs which can be specifically identified with the project and allowable indirect costs of the institution. Funds may not be used to establish, add a component to, or operate a treatment, rehabilitation, or prevention/intervention service program. Support for research-related treatment, rehabilitation, or prevention services and programs may be requested only for costs required by the research. These costs must be justified in terms of research objectives, methods, and designs which promise to yield generalizable knowledge and/or make a significant contribution to theoretical concepts.

Grants must be administered in accordance with the PHS Grants Policy Statement (Rev. October 1990), which should be available from your office of sponsored research.

INQUIRIES

Written and telephone inquiries are encouraged. The opportunity to clarify any issues or questions from potential applicants is welcome.

Direct inquiries regarding pre-intervention research, prevention research, and policy effects to:

Susan E. Martin, Ph.D.
Prevention Research Branch, NIAAA
Parklawn Building, Room 13-C23
5600 Fishers Lane, Rockville, MD 20857
Telephone: (301) 443-1677

Direct inquires regarding research on biological, physiological, and neurobehavioral mechanisms to:

Ellen D. Witt, Ph.D.
Neuroscience and Behavior Research Branch, NIAAA
Parklawn Building, Room 16-C05
5600 Fishers Lane, Rockville, MD 20857
Telephone: (301) 443-4223

Direct inquiries regarding fiscal issues to:

Elsie Fleming
Grants Management Branch, NIAAA
Parklawn Building, Room 16-86
5600 Fishers Lane, Rockville, MD 20857
Telephone: (301) 443-4703

AUTHORITY AND REGULATIONS

This program is described in the Catalog of Federal Domestic Assistance, No. 93.273. Awards are made under authorization of the Public Health Service Act, Sections 301 and 464H, and administered under PHS policies and Federal Regulations at Title 42 CFR Part 52, "Grants for Research Projects," and Title 45 CFR Parts 74 and 92, "Administration of Grants" and 45 CFR Part 46, "Protection of Human Subjects." This program is not subject to the intergovernmental review requirements of Executive Order 12372 or Health Systems Agency review.

Sections of the Code of Federal Regulations are available in booklet form from the U.S. Government Printing Office.

OTHER RESEARCH-RELATED PROGRAMS SPONSORED BY NIAAA

NIAAA supports a variety of research grant programs to stimulate alcohol-related research. Some of the most relevant announcements are:

1. Alcohol Research Grants (R01) (revised January 1990)

2. Research on Worksite-related Alcohol Problems: Causative Processes, Primary and Secondary Prevention (February 1990)

3. Research on Economic and Socioeconomic Aspects of Alcohol Abuse (revised August 1992)

4. Research on the Prevention of Alcohol Abuse among Youth (revised March 1992)

A list of all program announcements and copies of specific program announcements are available from the National Clearinghouse for Alcohol and Drug Information (NCADI), P.O. Box 2345, Rockville, MD 20847-2345, telephone: (301) 468-2600 or 1-800-729-6686.

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