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Doing a shotgun: a drug use practice and its relationship to sexual behaviors and infection risk

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Abstract

There has been a rise in the frequency with which inhalational routes such as smoking are used for illicit drug use. A growing population of new inhalational drug users augments the pool of individuals at risk for transition to injection drug use. Further, illicit drug smoking has been implicated in the transmission of a variety of pathogens by the respiratory route, and crack smoking has been associated with an increased risk of HIV infection, particularly through the exchange of high-risk sex for drugs. Shotguns are an illicit drug smoking practice in which smoked drugs are exhaled or blown by one user into the mouth of another user. We conducted a series of ethnographic observations to attempt to characterize more fully the practice of shotgunning, the range of associated behaviors, and the settings and contexts in which this practice occurs. Shotguns may be seen as a form of drug use which has close ties to sexual behaviors, and which has both pragmatic and interpersonal motivations, combining in a single phenomenon the potential direct and indirect risk of disease transmission by sexual, blood borne and respiratory routes. These data support the need to develop and evaluate comprehensive risk reduction interventions, which take into consideration the relationships between interpersonal and sexual behaviors and specific forms of drug use.

Keywords: Substance abuse; Crack cocaine; Tuberculosis; HIV-infection; 'Shotgun'

Introduction

Since the mid-1980s, there has been a rise in the frequency with which inhalational routes such as smoking and sniffing are used for illicit drug use in the US (Des Jarlais et al., 1992; NIDA, 1995; Neaigus et al., 1996). The inhalational route appears to be chosen by some drug users as an alternate to injection as a means of reducing their risk of exposure to HIV (Hartgers et al., 1991; Des Jarlais et al., 1994a; Paone et al., 1996). However, many inhalation drug users are new illicit drug users (Des Jarlais et al., 1992; van Ameijden et al., 1994) and this augments the pool of individuals at risk for transition to injection drug use (Des Jarlais et al., 1992; van Ameijden et al., 1994; Irwin et al., 1996). Further, crack smoking has been associated with an increased risk of HIV infection, particularly through the exchange of high-risk sex for drugs (Chaisson et al., 1991; Edlin et al., 1994) as has nitrite inhalant use (Seage et al., 1992; Chesney et al., 1998). Thus the increased population of inhalational drug users poses a challenge to HIV prevention efforts (Des Jarlais et al., 1992; van Ameijden et al., 1994).

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Illicit drug smoking has also been implicated in the transmission of a variety of pathogens by the respiratory route including *Aspergillus*, *Salmonella* and *Mycobacterium tuberculosis* (Ungerleider et al., 1982; Taylor et al., 1982; Livengood et al., 1985; Hamadeh et al., 1988; Centers for Disease Control, 1991; Leonhardt et al., 1994; Perlman et al., 1995) and with respiratory tract colonization with the pathogens, *Streptococcus pneumoniae* and *Staphylococcus aureus* (Orr et al., 1996; Holbart et al., 1997). HIV-infected persons also have an increased risk of bacterial pneumonia which is further augmented among those who smoke illicit drugs (Caiaffa et al., 1994). Therefore, there is a need for a fuller understanding of inhalational drug use practices, their correlates and consequences. Ethnographic observations have been valuable in characterizing the range of drug injection practices and in delineating the practices which are associated with infectious complications and the transmission of HIV (Grund, 1993; Jose et al., 1993; Koester, 1994; Trotter, 1995; Grund et al., 1996). Less attention has been devoted to characterizing the practices of inhalation drug use which might confer the risk of infection. Ethnographic and qualitative research has also contributed to the understanding of risk as a socially situated construct and to how specific social relationships influence risk behaviors (Sibthorpe, 1992; Neaigus et al., 1994; Rhodes et al., 1996; Grund et al., 1996; Rhodes and Quirk, 1998).

'Shotguns' are an inhalational drug use practice in which smoked drugs are exhaled or blown by one user into the mouth of another user. As part of a study of tuberculosis, which is transmitted by the respiratory route, we observed that 17% of 354 active illicit drug users interviewed engaged in this practice (Perlman et al., 1997a). We now report on a series of ethnographic observations conducted to characterize more fully the practice of shotgunning, the range of associated behaviors and the settings and social contexts in which this practice occurs.

Methods

The data presented here were obtained through a targeted ethnographic study designed to characterize 'shotguns' as a drug use practice. The ethnography was part of a larger study examining the feasibility, acceptance and effectiveness of tuberculosis screening and directly observed preventive therapy among active drug users (Perlman et al., 1997a, 1997b; Paone et al., 1998). The study recruited active drug users at both a legally-sanctioned New York City syringe exchange (the Lower East Side Needle Exchange Program, LESNEP) and an inpatient drug detoxification facility (the Bernstein Detoxification Facility of Beth Israel Medical Center) located in the same area of the city (Perlman et al., 1997a, 1997b; Paone et al., 1998).

Participants at these two sites were offered HIV counseling and testing, tuberculin and anergy skin testing, and were interviewed. Both facilities serve an ethnically diverse inner city population of drug users, the majority of whom live on Manhattan's Lower East Side, and among whom HIV seroprevalence has been high (approximately 40%) (Des Jarlais et al., 1994a). Screening at the syringe exchange began in March 1995 and was initiated in September 1995 at the inpatient detoxification program.

Ethnographic interviews were conducted from a sample of those drug users participating in the TB screening who reported engaging in shotgunning within the last six months. Informants were recruited for ethnographic interviews on-site by the ethnographer, were contacted through 'snowballing' techniques among program participants, and were referred by study interviewers. Ethnographic methods also included participant observation, interviews on-site at the syringe exchange, and field interviews at drug users' homes and outdoor locations. Participant observation was conducted in settings where the study participants naturally injected or smoked drugs, including streets, parks, homes, crack smokehouses, other residences including squats (illegal residences in abandoned buildings) and a single room occupancy hotel for men.

Doing a shotgun: the physical act

The initial operative definition of the act of doing a shotgun was considered to be 'the practice of inhaling smoke and then exhaling it into another individual's mouth'. A more basic definition of a shotgun was developed from observing drug users' behavior, in which to 'do a shotgun' is to engage in a form of illicit drug use involving an exchange of smoke between two (or more) persons. Specifically, a shotgun always involves smoking, but smoke is sometimes blown into another's mouth without first having been inhaled. This is achieved either through an inverted cigarette or some other means; devices such as pipes, masks and various tubes are sometimes used to distribute smoke to one or more recipients.

Many informants described a 'traditional shotgun' as the normative type employed by the majority of users. This involves smoking a marijuana joint or a hand-rolled tobacco cigarette laced with some combination of hashish, crack, cocaine base or heroin. The person delivering the shotgun inverts the joint's burning end (referred to as a 'cherry' by a number of informants) into his or her mouth, holding it between the teeth and blowing smoke forcibly into the mouth and lungs of the recipient, who had exhaled in anticipation

of receiving a substantial 'hit'. Sometimes this 'hit' was described by our informants as producing a 'more intense rush' than that obtained by inhaling directly on one's own.

Various forms of breath exchange were sometimes employed, in which smoke was breathed back and forth between initiator and recipient. This cyclical breathing was often described by users as also contributing to sexual arousal, in addition to the effects of the drug itself. Because the 'recycled' inspired air in these cyclical breathing behaviors may contain reduced concentrations of oxygen and increased concentrations of carbon dioxide, they may result in additional psychoactive effects induced by central effects of these alterations in lung gas exchange; such effects may perhaps be analogous to those resulting from self-induced cerebral hypoxemia (oxygen deprivation) in the paraphilic practice of autoerotic asphyxia (Byard et al., 1990; Friedrich and Gerber, 1994).

The most common 'nontraditional' form of doing a shotgun was one in which the deliverer first inhales smoke through a pipe, and then, after holding it for a moment, passes it to their partner by exhaling into the other person's mouth. This was occasionally observed to happen sequentially in a group. Studies of the bioavailability of tetrahydrocannabinol in humans have shown pipes to be more efficient delivery systems than 'joints' or cigarettes (Perez-Reyes, 1990), perhaps allowing shotguns of smoke first inhaled through a pipe to remain a pharmacologically efficient means of delivering smoke to the recipient.

Origins of the practice and the term 'shotgun'

When asked about the origin of the practice and of the term 'shotgun', informants suggested that the intense 'rush' caused by this practice is analogous to the impact of the blast of a shotgun. The term 'blast' was also commonly used to refer to taking a 'hit' of cocaine or crack. While the analogy of the 'rush' to a shotgun blast was the most common explanation of the term, some informants reported that the expression originated from a practice among military personnel in Vietnam during the war, of blowing smoke (e.g. marijuana), through the barrel of a rifle, gun or piece of bamboo for another to inhale. In point of fact, a television news report from Vietnam, circa 1970, shows enlisted men blowing marijuana smoke into each others' mouths through the barrel of a rifle (NBC News, October 10, 1970).

Most informants were clear that the term 'shotgun' was in use as early as the 1960s. Older informants suggested that the practice itself had been '...around a lot longer than that'. One 50-year-old Puerto Rican heroin and cocaine injector, a Vietnam veteran who had grown up on the Lower East Side, also added: ''It just wasn't referred to as doing a shotgun''.

Since shotgunning can only be practiced with drugs which are smoked, it is possible that the practice may have increased with the advent of smokable forms of cocaine, such as crack and cocaine base ('freebase'). Marijuana was the drug most closely identified with doing a shotgun in the 1960s and 1970s. The 'nontraditional' forms of doing a shotgun, such as are practiced with crack or cocaine base smoked through a glass pipe, may only more recently have been considered as falling under the rubric of doing a shotgun. The practice of 'nontraditional' shotguns was reported to have spread in the US as a consequence of the use of 'bongs' and other water pipes, in the US in the late 1960s.

Drugs and drug combinations used in the contemporary shotgun

The informant population consisted mostly of polydrug users, reflecting the population seen in the study settings (Perlman et al., 1997a, 1997b). Interviews and observations involved shotguns primarily of cocaine (as base or crack), but also of marijuana, heroin, hashish and tobacco.

The same drugs were administered in varying combinations and sequences. For instance, at events observed in a Bowery single room occupancy hotel, shotguns were combined with periods of individual smoking, and participants alternated between injection and noninjection route of administration. In what was sometimes referred to as a form of 'speedball', heroin injection was followed by smoking and doing shotguns of crack cocaine. Four individuals (three men and one woman) were observed in a series of drug use practices in a room in a 'squat'. Two of the men began by injecting heroin, followed by smoking 'rock', which they referred to as doing a 'speedball'. The two others were also occasional drug injectors but only smoked on this occasion. All four then shared shotguns with one another. The two men then injected heroin again, followed by repeated episodes of crack smoking and shotgunning among combinations of the four.

Drugs were also sometimes combined in the shotgun itself (e.g. in a marijuana or tobacco cigarette laced with cocaine base). On one occasion, the shotgun technique was used between two men and a woman to share a marijuana joint laced with crack.

Contexts and motivations

The practice of doing a shotgun has been significantly associated with crack use, alcohol abuse and

high risk sex particularly among younger white substance abusers based on responses to quantitative questionnaire data (Perlman et al., 1997a). This suggests that it may be a practice defined by membership in particular social networks (Perlman et al., 1997a). Responses to the structured questionnaire tended to emphasize practical considerations as reasons for doing a shotgun: of 354 drug users interviewed, 'conserving drugs/sharing costs' was cited by 42% of those doing a shotgun, while 'intimacy/social activity' was reported by 24%, and getting a 'better/more intense' high by only 12% (Perlman et al., 1997a).

Ethnographic observations suggest a multiplicity of factors relating to the decisions to engage in this practice. One informant, a 24-year-old white male squatter, who regularly smoked base or crack cocaine following an injection of heroin, described the overlap of economic and social considerations related to his decision to do a shotgun:

> I do it with my friends. Like the people that, I've got a couple of friends that smoke sometimes, like smoke crack, and we'll do it, I'll do it with them basically, you know, when they're smoking crack. Like, yeah, there's never enough to go around, so somebody like tells me 'do you want my shotgun?...' in other words, they're gonna smoke it themselves and they'll share it that way instead of, instead of, you know, like I don't know, instead of sitting there in front of somebody and smoking it or, or like cutting up what they had, then nobody will get anything.

On another occasion, a group of users had bought crack in vials — one for each user — but had accidentally broken one of these vials and lost its contents. A member of the group then offered to solve the problem of sharing the now unequal supply by taking shotguns of crack from the other users, and his offer was accepted.

While these examples might suggest that illicit drug users engage in doing a shotgun primarily when the supply of drugs is limited, the focus on pragmatic reasons — both in the quantitative responses and in verbalized descriptions — might also reflect rationalizations for a deeply embedded social practice that serves other functions as well. Direct observations in various settings showed that even with a sufficient supply of smokable cocaine, users often engaged in taking one anothers' shotguns, and they were frequently heard to ask one another: 'do you want my shotgun?' or 'can I have your shotgun?'

Although in close social networks of smokers these offers were usually made among intimate friends, in crack smokehouses such behavior was also common among people who had only recently met. In some settings shotguns were exchanged despite adequate drug supply, sometimes in response to certain situational or social pressures. Observations in a crack smokehouse revealed that etiquette often required sharing the drug with 'the house owner'. One informant, a 30-year-old hispanic male poly-substance user, noted the effects of social pressure when he stated:

> I mean, it's just like you usually just do it because there's not enough to go around, you know. I mean, because I feel like an ass if I'm sitting there getting high in front of somebody, you know, and like we're hanging out or whatever. Like usually like, like ah, usually how it works is my friend has guests, ... and they'll come over and they don't have anybody else to really do it and so they gotta do it, and, you know, they gotta do it in the room and... like people are hanging out and they want to shotgun and it's really no, you know, if I'm smoking coke — smoking crack, I mean, it's really no sweat off my back to give somebody a shotgun, you know... like you feel something when you do a shotgun, you know, off somebody.

Such statements suggest that in certain circumstances there is a degree of social pressure to provide people who may have no drugs with a 'blast', and giving them a shotgun may be perceived as a socially acceptable way of doing this. Consistent with this hypothesis, we observed that the language used by the person delivering a shotgun was often marked with phrasing that implied ownership or possession of the drug supply. In one crack smokehouse an African-American man in his thirties who used multiple drugs, reported that the shotgun was often offered with the question 'do you want my shotgun?'. He explained that there is a social 'pressure to not let someone stare and watch you get high', and that there is also a notion that 'people feel uncomfortable being watched and not sharing'. One user, a 28-year-old white male crack smoker and heroin injector, noted that pipes contain residue which can be scraped and used again, and that this was something that 'they [other users] might try to do'. Therefore, instead of letting someone share the pipe itself, the act of giving a shotgun functioned as a way that drugs could be shared in controlled amounts, and the social pressure relieved.

Many informants reported engaging in shotguns in close temporal relation to sexual encounters, and often described the shotguns themselves as 'hot' or 'erotic'. Some suggested that the choice of partners with whom one might engage in a shotgun was often related to sexual object choice. A number of heterosexual informants reported, 'I only do it with women'. A 29-year-old hispanic male informant described how two men doing a shotgun would, among straight identified men,

be labeled as 'two queers sitting on the couch'. Although the exchange of smoke in shotgunning was frequently incorporated quite directly into sexual activities, at times it appeared to play a more discreet role, serving to convey less explicit sentiments. It was used to encourage intimacy and as a part of amorous foreplay: '...if you wanted to hit on somebody and act on somebody, you know... it would be an okay way to get closer to somebody...'.

Further, shotguns sometimes appeared to serve as a form of socially acceptable homoerotic behavior between men not overtly identified as gay. In many drug smoking and shotgun episodes observed, the practice appeared to be related to heightened sexual stimulation and lowered sexual inhibitions. Such erotic or sexual meanings and associations, not infrequently observed in the context of doing a shotgun, pose added risk of sexual disease transmission.

Conclusions

There has been a rise in the use of illicit drugs by inhalational routes (Des Jarlais et al., 1992; NIDA, 1995; Neaigus et al., 1996). The health risks of drug smoking include those stemming from the increased risk of transition to injection drug use (Des Jarlais et al., 1992; van Ameijden et al., 1994; Irwin et al., 1996) and those directly related to drug smoking. Drug smoking may result in the direct transmission of a variety of infectious pathogens by the respiratory route, including *Salmonella*, *Aspergillus* and *Mycobacterium tuberculosis* (Ungerleider et al., 1982; Taylor et al., 1982; Livengood et al., 1985; Hamadeh et al., 1988; Centers for Disease Control, 1991; Leonhardt et al., 1994; Perlman et al., 1995).

Drug smoking has been associated with an increased risk of respiratory tract colonization with pathogenic bacteria including *Streptococcus pneumoniae* and *Staphylococcus aureus* (Orr et al., 1996; Holbart et al., 1997). Respiratory tract colonization with *S. aureus* serves as a reservoir for the organism and thereby contribute to the risk of *S. aureus* endocarditis, and skin and soft-tissue infections from nonsterile injection practices (Holbart et al., 1997).

Such respiratory tract colonization also serves as a reservoir from which respiratory tract infections due to these pathogens may develop (Caiaffa et al., 1994; Holbart et al., 1997). HIV-infected persons have an increased risk of bacterial pneumonia compared to HIV-uninfected persons, and illicit drug smoking as associated with a further increase in pneumonia risk among HIV-infected persons (Caiaffa et al., 1994). Bacterial pneumonia in turn is associated with an increased risk of *Pneumocystis carinii* pneumonia among HIV-infected individuals (Kaplan et al., 1998), and the host cytokine response to intercurrent infections such as bacterial pneumonias result in transient increases HIV replication which may have implications for HIV disease progression (Bush et al., 1996; Donovan et al., 1996).

Further, both crack smoking (Chaisson et al., 1991; Edlin et al., 1994) and nitrite inhalant use (Seage et al., 1992; Chesney et al., 1998) have been associated with an increased risk of HIV-infection. These associations have been related to the exchange of high-risk sex for drugs (Chaisson et al., 1991; Edlin et al., 1994), to their occurrence within high risk social networks (Neaigus et al., 1994), and potentially to contact between contaminated drug use paraphernalia and oral and buccal mucosal abrasions and lesions (Faruque et al., 1996).

Practices that involve sharing smoke between two or more individuals carry a risk of drug-related disease transmission, both through the act of drug use itself (Ungerleider et al., 1982; Taylor et al., 1982; Hamadeh et al., 1988; Livengood et al., 1985; Centers for Disease Control, 1991; Leonhardt et al., 1994) and through related high risk sexual activity and sexual activity in high risk social networks (Chaisson et al., 1991; Edlin et al., 1994; Neaigus et al., 1994).

To 'do a shotgun' is to engage in a form of illicit drug use involving an exchange of smoke between two (or more) persons. The data presented here suggest a number of possible forces and motivations which may underlie the use of shotguns as a drug smoking practice. These are related to the general rise in inhalational drug use and include the availability and use of smokable forms cocaine (crack and base), the social contexts under which drugs are smoked and the perception that this drug use practice enhances both sexual pleasure and the psychotropic effects of the drug(s) used.

Our observations suggest that the shotgun technique of sharing smoked drugs allows for a combination of both purely pragmatic considerations — maximizing the effects from an available supply — with forms of ritualized bonding which have important functions in forging and maintaining social relationships among illicit drug users. In many contexts, it is evident that shotguns also involve meaningful associations of drug use with sexual activities (both hetero- and homosexual) among participants. This practice thus represents one of the clearest conflations of meanings associated with sexual activity and drug use: what many users refer to as 'sex and drugs go[ing] hand in hand'.

Various methods (such as cyclical breathing behaviors) are perceived as enhancing the 'shotgun' experience and at the same time increasing eroticism. These drug use behaviors may facilitate erotic experiences and sexual contact between individuals who might not typically engage in sexual activity together (e.g. hetero-

sexual men, heterosexual women and gay and heterosexual men). Doing a shotgun may thus allow a degree of sexual intimacy, disguise sexual interest or identity and may serve as an introduction to potentially risky sexual activity. These observations are consistent with the previous finding that having engaged in high risk sex was independently associated with doing shotguns (Perlman et al., 1997a).

These issues are relevant to investigations of drug- and sex-related risks of disease transmission. Unlike syringe-sharing, where the risk is precise and clearly identifiable, the potential infectious risks associated with shotgunning are more indirect and consist of high risk sexual practices 'facilitated' by the shotgun, the potential transfer of pathogenic agents through infectious aerosols, and associations between noninjection and injection illicit drug use behaviors. The elaboration of sexual and drug user identities through the use of the shotgun demonstrates the overlapping, interrelated risks of smoking drugs and engaging in high risk sex, and reveals some of the complex links between illicit drug use, sexual activity and disease transmission.

Some of the motivations and forces underlying the practice of 'doing a shotgun' have analogy to those related to some injection drug use practices. Needle sharing has been found to have both pragmatic and interpersonal motivations, serving both as a response to limitations in access to syringes and as a form of bonding and mutual assistance among drug injectors (Grund, 1993; Koester, 1994; Grund et al., 1996). However, while needle sharing may have previously symbolized bonding and mutual assistance, it has come to symbolize risk. Fortunately, despite having a multiplicity of motivations and symbolic meanings imbedded in social contexts, needle sharing behaviors have been amenable to behavior change (Des Jarlais et al., 1994b, 1996) suggesting the potential for behavior change regarding drug smoking behaviors such as 'doing a shotgun'. However, as with the direct sharing of syringes, the sharing of filters and spoons, and indirect syringe sharing through front and backloading practices (Jose et al., 1993; Hunter et al., 1995), it may be necessary to develop interventions which take into account the social contexts and 'social etiquette' related to these behaviors in order to effect long term behavior change and risk reduction (Hunter et al., 1995; Grund et al., 1996; Rhodes and Quirk, 1998).

These data are the most thorough examination of the phenomenon of 'doing a shotgun' to date. However, limitations include the fact that observations were limited to only a few selected settings; thus, further examination of the frequency of shotgunning and its socio-economic contexts in different geographic settings would be valuable. Further, this preliminary study was not designed to document an association between shotgunning and specific health risks; however, the potential for this practice to transmit, or increase the risk of, a number of relevant infections (e.g. tuberculosis, respiratory tract colonization with bacterial pathogens, bacterial pneumonia) exists and is biologically plausible and associations between illicit drug smoking in general and a range of health risks have been demonstrated in other related settings (Centers for Disease Control, 1991; Caiaffa et al., 1994; Edlin et al., 1994; Leonhardt et al., 1994; Perlman et al., 1995; Orr et al., 1996). Nevertheless, we were able to characterize the practice of shotgunning, its settings and contexts and the range of associated behaviors which often involves the blurring of distinctions between risk behaviors and risk groups as typically characterized.

In summary, our findings underscore the complexity of factors which underlie the illicit drug smoking behavior of doing a shotgun. Shotguns may be seen as a form of drug use which has close ties to sexual behaviors, and which has both pragmatic and interpersonal motivations, combining in a single phenomenon the potential direct and indirect risk of disease transmission by sexual, blood borne and respiratory routes. Given the rise in inhalational drug use and its implications and consequences, a better understanding of the practices involved in inhalational drug use and the interaction between individual risk behavior and social relationships would be invaluable in developing interventions to address the risks associated with these behaviors. These data support the need to develop and evaluate comprehensive risk reduction interventions which take into consideration the relationships between interpersonal and sexual behaviors and various forms of drug use, as part of efforts to enhance prevention and harm reduction efforts directed towards drug users.

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