Published in final edited form as:

Addict Res Theory. 2014 August 1; 22(4): 271–278. doi:10.3109/16066359.2013.838225.

Injection Drug Users' Perceived Barriers to Using Self-Initiated Harm Reduction Strategies

Erin E. Bonar, Ph.D and

University of Michigan, Addiction Research Center, 4250 Plymouth Road, Ann Arbor, MI 48109-0720

Harold Rosenberg, Ph.D.

Bowling Green State University, Department of Psychology, Bowling Green, OH 43403

Abstract

Introduction and Aims—Increasing the frequency with which injecting drug users (IDUs) engage in self-initiated harm reduction strategies could improve their health, but few investigations have examined IDUs' perceived barriers to engaging in these behaviors.

Method—We interviewed 90 IDUs recruited from needle exchanges to assess: a) perceived obstacles to their use of two specific harm reduction strategies (i.e., test shots and pre-injection skin cleaning) designed to reduce two unhealthy outcomes (i.e., overdose and bacterial infections, respectively) and b) their use of other risk-reduction practices.

Results—The most frequently cited barrier for both test shots and skin cleaning was being in a rush to inject one's drugs. Other, less commonly cited barriers were strategy-specific (e.g., buying drugs from a known dealer as a reason not to do a test shot; not having access to cleaning supplies as a reason not to clean skin). Regarding other risk reduction practices, participants' most frequently reported using new or clean injecting supplies and avoiding sharing needles and injecting supplies.

Discussion and Conclusions—Some, but not all, of the barriers generated by participants in our study were similar to those frequently reported in other investigations, perhaps due to differences in the type of sample recruited or in the harm reduction behaviors investigated.

Keywords

harm reduction; injecting drug use; infections; test shots

INTRODUCTION

Although the prevalence rates of harmful outcomes vary depending on the specific health condition and the sample studied, injection drug users (IDUs) experience a variety of negative health outcomes associated with drug injection, including collapsed veins, skin abscesses, Hepatitis, HIV/AIDS, septicemia, infective endocarditis, deep vein thrombosis, tetanus, wound botulism, and overdose (Darke, Ross, & Hall, 1996; Dolan et al., 2004;

Havens et al., 2011; Phillips & Rosenberg, 2008; Pollini, McCall, Mehta, Vlahov, & Strathdee, 2006; Seal et al., 2001). Non-injection routes of administration would be a healthier course, but many drug takers will continue to inject illicit drugs and they would benefit from employing harm reduction strategies to reduce the likelihood of experiencing injecting-related health problems (Ritter & Cameron, 2006).

Many IDUs do not have access to harm reduction services (e.g., needle exchange programs, safe injecting facilities), but they may employ certain harm reduction strategies on their own, with little or no assistance from others and no significant monetary cost. For example, as one way to reduce overdose risk, overdose prevention programs recommend injecting a small dose of the drug (i.e., a test shot) to test its potency before self-administering the entire dose of a drug of unknown potency (Curtis & Guterman, 2009; Harm Reduction Coalition, 2000; 2012; Moore, 2004). IDUs may also clean their injection sites with rubbing alcohol, hand sanitizer, or soap and water prior to injecting to help reduce the likelihood of infections that may occur from bacteria on the skin entering the injector's blood stream (Colon et al., 2009; Varga, Chitwood, & Fernandez, 2006). Other self-initiated harm reduction strategies include sterilizing used or borrowed injecting supplies with bleach and disposing of used injecting equipment in puncture-proof containers, both of which also reduce the likelihood of spreading infections.

Although self-initiated harm reduction strategies are inexpensive and easy to employ, many IDUs do not use such strategies every time they inject. For example, Phillips and Rosenberg (2007) asked 99 American IDUs about how frequently (always, sometimes, or infrequently/never) they used each of 15 harm reduction strategies and found that many strategies were used infrequently and that the frequency with which they used self-initiated harm reduction interventions appeared to be strategy-specific. For example, test shots were always employed by 7% of respondents, sometimes employed by 29%, and infrequently or never employed by 76%. Another self-initiated intervention, skin cleaning with alcohol or soap and water, was always employed by 15% of respondents, sometimes employed by 59%, and infrequently or never employed by 26%.

Similarly, Varga, Chitwood, and Fernandez (2006) reported that only 24% of their sample of 600 IDUs reported having "always" cleaned their injection site in the past month and Vlahov, Sullivan, Astemborski, and Nelson (1992) found that 53% of their sample of 1,057 IDUs had ever cleaned their skin prior to injecting and only 31% of those had cleaned their skin "all the time" in the previous six months. Prior research has also demonstrated that IDUs infrequently use other self-initiated harm reduction strategies, such as using a dropper to pour water into a cooker (instead of using possibly contaminated syringes to load water), drawing up drug mixtures with a preparation syringe, backload rinsing of syringes (Colon et al., 2009), and sterilizing needles with bleach (Fisher, Harbke, Cauty, & Reynolds, 2002; Hawkins, Latkin, Mandel, & Oziemkowska, 1999; Nyamathi, Lewis, Leake, Flaskerud, & Bennett, 1995; Zapka, Stoddard, & McCusker, 1993).

Despite the potential benefits of self-initiated strategies to reduce the biomedical harms of injecting, there has been little research examining IDUs' perceived barriers to engaging in such behaviors. One of the few studies to address this question was a qualitative

investigation by Williams (1991), who evaluated reported barriers to “safe drug use” among 15 drug-injecting women. Content analysis revealed fear of withdrawal, craving, limited access to sterile injecting equipment, and the cost of new injecting equipment as commonly mentioned barriers to safer use, but Williams (1991) did not evaluate whether barriers were specific to harm reduction strategies. Latkin and colleagues (1991) asked 413 IDUs why they shared injection equipment without first cleaning it with bleach. Common reasons included rushing to get high, not having bleach available, and not having space or tools to clean needles. Among the subset of 252 IDUs who responded there was a “small” or “no chance” that they would carry bleach, the most commonly reported reasons for not doing so included getting high at home, viewing cleaning as too much of a hassle, and a desire to stop using drugs.

Using a focus group methodology, Gleghorn and Corby (1996) found that 154 IDUs’ reported barriers to disinfecting needles included being in withdrawal, “only thinking about getting high,” lack of access to supplies, absence of cleaning among other IDUs present, and being in a hurry (to avoid police detection, to let others use the syringe). Finally, in a quantitative investigation of 122 female IDUs, Nyamathi and colleagues (1995) reported that the most commonly endorsed barriers to needle disinfection were not having one’s own needle, needing to hide the needle, interest in getting high and not cleaning, no availability of cleaning supplies, and injecting outside of one’s home.

The research outlined above provides a foundation for understanding IDUs’ reasons for not employing needle disinfection procedures, one type among many self-initiated harm reduction strategies. As clinicians and public health educators seek to encourage use of other strategies, they will benefit from information on IDUs’ perceived barriers to employing other potentially valuable harm reduction interventions as well as information on current risk reduction practices. Therefore, the present paper reports on our study of IDUs’ perceived barriers to using two specific, self-initiated harm reduction strategies (i.e., test shots and pre-injection skin cleaning) designed to reduce two different health outcomes (i.e., overdose and bacterial infections, respectively). These two strategies have the advantages of involving little or no monetary expense while holding promise to prevent harmful outcomes that are relatively common among IDUs (Phillips & Rosenberg, 2008; Phillips, Stein, Anderson, & Corsi, 2012). In addition to evaluating perceived barriers to engaging in test shots and pre-injection skin cleaning, we also asked IDUs to describe behaviors they engage in to reduce the risks associated with injecting.

METHOD

Participants

After receiving approval from our institution’s human subjects review board and the data collection sites, we recruited 91 participants from three needle exchange programs located in Northeastern Ohio ($n = 74$), Western Michigan ($n = 9$), and Southeastern Michigan ($n = 8$) in the United States between October 2009 and June 2010. Participants were recruited for a larger study evaluating the relationships between health beliefs and intentions to engage in harm reduction strategies in different injecting situations (reference removed for blind review). To be eligible, potential participants had to be enrolled in the needle exchange

program (participants could have enrolled on the day of study participation), be at least 18 years old, speak English clearly, and report having injected drugs at least weekly during the previous three months. Potential participants were informed that their participation was completely voluntary, they were free to skip any questions they did not wish to answer, and they could withdraw from participation at any time.

Of the 90 individuals who provided consent and agreed to participate in a brief structured interview at the conclusion of the larger study cited above, 77% were male; 47% self-identified as Caucasian, 28% as African American, and 21% as Hispanic/Latino; and their mean age was 45.4 years ($SD = 11.3$). A large majority of participants (88%) reported that heroin was the substance they used most often and 54% reported at least one past overdose. Participants were also asked how often, over the previous three months, they had engaged in both pre-injection skin cleaning and test shots in the four injecting situations included in the main study (i.e., alone, with others, in withdrawal, not in withdrawal). Only small proportions of participants reported “always” using test shots (3% to 6% across the four situations), but larger proportions indicated that they had “always” engaged in pre-injection skin cleaning (19% to 26% across the four situations). Details about the full data collection procedure and additional information regarding participant demographics and drug use history characteristics are reported in (reference removed for blind review).

Procedure

Following completion of several questionnaires as part of the larger study of health beliefs and intentions to engage in harm reduction behaviors, participants were asked three open-ended questions:

1. “You may know that injecting drugs carries certain health risks. What kinds of things do you do to reduce the health risks of injecting drugs?”
2. “Many people who inject drugs do not do a “test shot” every time they inject drugs. What types of things get in the way of you doing a test shot every time you inject drugs?” (Test shots were previously defined for participants as “injecting a small amount of a street drug before injecting the entire ‘hit’ in order to test the strength of the drug.”)
3. “Many people who inject drugs do not wash and clean their injection sites with alcohol wipes or soap and water before they inject every time. What types of things get in the way of you cleaning your injecting sites every time you inject drugs?”

Participants’ responses were written down by the interviewer for content analysis. We did not develop coding categories *a priori*, but rather used participants’ responses to inform development of the coding scheme. The first author read through participants responses to each question separately and noted common themes that emerged from the data for each of the three questions separately. Once these coding categories were established (see Tables 1, 2, and 3), participants’ responses were coded by the first author in consultation with the second author. To assess inter-rater reliability, we trained a graduate student in clinical psychology who was not otherwise involved in this project to code a randomly-selected subset (10%) of responses to each open-ended question. Inter-rater reliability (calculated as

the number of agreements divided by the number of agreements plus disagreements) was .75 for Question 1 (risk reduction), .82 for Question 2 (barriers to test shots), and .91 for Question 3 (barriers to skin cleaning).

RESULTS

Reported barriers to using test shots

When asked to list barriers/reasons for not using test shots, participants' responses to this open-ended question most often contained references to being in a rush or a hurry and not having time for a test shot (24% of responses) and to having used from the same batch of drugs before or obtaining drugs from the same dealer so that they presumably knew the drugs' strength (20% of responses). Smaller proportions of responses mentioned not having enough drugs or wanting to avoid wasting drugs (15%), not thinking about test shots (14%), and being in withdrawal (13%). Table 1 provides the full list of themes, the number of responses that reflected each theme, and exemplar quotes for each theme.

Reported barriers to skin cleaning

When asked to list barriers/reasons for not cleaning their skin prior to injecting, 40% of responses reflected being in a hurry to use or being impatient. The next three most frequently mentioned responses were being in withdrawal (23% of responses), not having access to cleaning supplies (19% of responses), and simply not thinking about skin cleaning (19% of responses) as barriers to using this strategy. Table 2 provides the full list of the themes, the number of responses that reflected each theme, and exemplar quotes for each theme.

Reported behaviors to reduce injecting-related harms

Participants' responses to the question about the types of behaviors they engage in to reduce the harms of injecting most often reflected using clean or new injecting supplies and/or avoiding reusing injecting supplies (49% of responses) and avoiding sharing needles or injecting supplies (43% of responses). Almost one-third of responses reflected cleaning the injection site before *or* after injecting (30% of responses) and generally keeping oneself clean was mentioned in 16% of responses. Table 3 provides the full list of themes, the number of responses that reflected each theme, and exemplar quotes for each theme.

DISCUSSION

The present study was designed to assess IDUs' reported barriers to engaging in two self-initiated harm reduction behaviors (i.e., test shots and pre-injection skin cleaning) and their engagement in other injection-related harm reduction practices. No single barrier to engaging in either harm reduction strategy was cited by a majority of participants, but the most frequently reported barrier to employing both strategies had to do with being in a hurry or a rush to inject. Other themes were strategy-specific. For example, in reference to test shots, participants specifically mentioned using the same batch of drugs or same dealer (implying that they knew the strength of the drug) and not having enough drugs or not

wanting to waste drugs. Not having cleaning supplies and environmental factors were mentioned specifically in reference to pre-injection skin cleaning.

Some, but not all, of the barriers generated by participants in our study were the same or similar to those frequently reported in other investigations. Specifically, Williams' participants (1991) mentioned fear of withdrawal as a barrier to safe injecting, in addition to mentioning limited access to sterile injecting equipment. Similarly to a subset of our participants who noted wanting to get high as a barrier to doing test shots, Gleghorn and Corby (1996) reported that some of their participants voiced being a hurry to inject and a desire to get high as a barrier to needle disinfection. However, Gleghorn and Corby's respondents listed more specific reasons for being in a hurry (e.g., to avoid police detection) than did participants in the present investigation. Latkin et al.'s (1995) participants also cited being in a rush and lack of cleaning supplies as reasons for sharing works without first cleaning them; however, only 3% of their sample mentioned being "too sick to clean" (referring to withdrawal, which was frequently mentioned by our participants). Although some of the barriers to test shots and skin cleaning generated by our participants (e.g., time constraints, environment, lack of supplies) were included on Nyamathi et al.'s (1995) list of possible barriers to needle disinfection, our participants' responses reflected additional perceived barriers not included on their list (e.g., forgetting, laziness, not seeing the behavior as necessary), some of which were strategy-specific (e.g., "dealer knows strength of drugs" and "tolerance for drugs" as reasons for not doing test shots).

Responses to our question asking about personal harm reduction practices reflected strategies such as avoiding reuse of needles, using clean or new injection equipment, and avoiding sharing needles or works. Somewhat surprisingly, although all participants were recruited at needle exchange programs, only about half spontaneously mentioned using clean needles as a risk reduction practice. However, it may be that many participants did not mention using clean needles because they considered it an obvious strategy given that they were being interviewed at a needle exchange. Alternatively, some participants may have neglected to mention clean needles because they were new to the needle exchange program (15% were interviewed on their first visit) or because they did not *always* use clean needles.

Methodologically, providing participants with a list of perceived barriers has the advantages of not relying on recall or participants' ability to articulate obstacles to their use of harm reduction. However, asking IDUs open-ended questions instead of providing a checklist of possible reasons has the advantages of assessing both common and idiosyncratic perceived barriers without suggesting possible answers or over-reporting barriers due to demand bias. Because our structured interview was part of a larger study related to participants' use of test shots and pre-injection skin cleaning, participants may have been primed to name these two strategies when asked the question about injecting-related risk reduction behaviors. This concern is tempered by our finding that less than one-third of the sample mentioned skin cleaning and only two participants spontaneously mentioned doing test shots when asked about their risk-reduction practices.

Another potential limitation of the study is that the coding categories reflect our interpretations of participants' responses, and other researchers may have generated different

themes. In addition, our study was conducted with a sample recruited from needle exchange programs, and IDUs who do not have access to or do not use needle exchange programs, or who have access to other types of harm reduction services, may perceive other types of barriers than those reported by individuals in our sample. Further, these data will be limited by the extent to which participants are insightful regarding reasons for their injecting and harm reduction practices.

These limitations notwithstanding, our results suggest one way in which harm reduction services might be improved. Specifically, that at least some barriers were strategy-specific suggests the value of assisting IDUs to anticipate and practice overcoming commonly mentioned (and individual) barriers to using different types of risk reduction strategies, rather than providing generic encouragement to employ harm reduction. Further, if only a limited number of American substance abuse treatment agencies provide harm reduction education (Rosenberg & Phillips, 2003), IDUs may be unaware of certain harm reduction strategies that they might otherwise be willing and able to practice. Finally, as a complement to the existing literature that addresses IDUs' perceived reasons for engaging in injecting-related risk behaviors (Deutscher & Perlman, 2008; Kermode, Longleng, Singh, Bowen, & Rintoul, 2009; Rhodes et al., 2003; Sarang et al., 2006; Todd et al., 2009), we encourage additional research to evaluate IDUs' perceived barriers to engaging in other types of self-initiated harm reduction strategies (e.g., muscling, cleaning injecting equipment) and to investigate the contextual factors that influence perceived barriers to engaging in various strategies.

Acknowledgments

The authors wish to acknowledge Shane Kraus and Erica Hoffmann for their assistance with data collection, Alan Kooi Davis for his assistance with inter-rater reliability coding, and the data collection sites (The Free Medical Clinic of Greater Cleveland in Cleveland, Ohio, The Grand Rapids Red Project in Grand Rapids, Michigan, and the HIV/AIDS Resource Center in Ypsilanti, Michigan). These individuals and organizations had no other roles in the design, analysis, and interpretation of results.

References

- Colon HM, Finlinson HA, Negron J, Sosa I, Rios-Olivares E, Robles RR. Pilot trial of an intervention aimed at modifying drug preparation practices among injection drug users in Puerto Rico. *AIDS Behavior*. 2009; 13:523–531. [PubMed: 19308722]
- Curtis, M.; Guterman, L. *Overdose prevention and response: A guide for people who use drugs and harm reduction staff in Eastern Europe and Central Asia*. New York: The Open Society Institute; 2009.
- Darke S, Ross J, Hall W. Overdose among heroin users in Sydney, Australia: I. Prevalence and correlates of non-fatal overdose. *Addiction*. 1996; 91:405–411. [PubMed: 8867202]
- Deutscher M, Perlman DC. Why some injection drug users lick their needles: A preliminary survey. *International Journal of Drug Policy*. 2008; 19:342–345. [PubMed: 18638706]
- Dolan K, Clement N, Rouen D, Rees V, Shearer J, Wodak A. Can drug injectors be encouraged to adopt non-injecting routes of administration? *Drug and Alcohol Review*. 2004; 23:281–286. [PubMed: 15370007]
- Fisher DG, Harbke CR, Canty JR, Reynolds GL. Needle and syringe cleaning practices among injection drug users. *Journal of Drug Education*. 2002; 32:167–178. [PubMed: 12206065]
- Gleghorn AA, Corby NH. Injection drug users' reactions to guidelines for bleach disinfection of needles and syringes: Implications for HIV prevention. *Journal of Drug Issues*. 1996; 26:865–881.

- Harm Reduction Coalition. The straight dope: Overdose prevention and survival. New York: Harm Reduction Coalition; 2000.
- Harm Reduction Coalition. Getting off right: A safety manual for injection drug users. New York: Harm Reduction Coalition; New York, NY; 2012. Available at: <http://www.harmreduction.org> (accessed July 2012)
- Havens JR, Oser CB, Knudsen HK, Lofwall M, Stoops WW, Walsh SL, et al. Individual and network factors associated with non-fatal overdose among rural Appalachian drug users. *Drug and Alcohol Dependence*. 2011; 115:107–112. [PubMed: 21126831]
- Hawkins WE, Latkin C, Mandel W, Oziemkowska M. Do actions speak louder than words? Perceived peer influences on needle sharing and cleaning in a sample of injection drug users. *AIDS Education and Prevention*. 1999; 11:122–131. [PubMed: 10214496]
- Kermode M, Longleng V, Singh BC, Bowen K, Rintoul A. Killing time with enjoyment: A qualitative study of initiation into injecting drug use in North-East India. *Substance Use & Misuse*. 2009; 44:1070–1089. [PubMed: 19544149]
- Latkin CA, Mandell W, Vlahov D, Knowlton AR, Oziemkowska M, Celentano DD. Self-reported reasons for needle sharing and not carrying bleach among injection drug users in Baltimore, Maryland. *Journal of Drug Issues*. 1995; 25:865–870.
- Moore D. Governing street-based injecting drug users: a critique of heroin overdose prevention in Australia. *Social Science and Medicine*. 2004; 59:1547–1557.
- Nyamathi AM, Lewis C, Leake B, Flaskerud J, Bennett C. Barriers to condom use and needle cleaning among impoverished minority female injection drug users and partners of injection drug users. *Public Health Reports*. 1995; 110:166–172. [PubMed: 7630993]
- Phillips, KT.; Rosenberg, H. Assessing intravenous drug users' use of harm reduction strategies to prevent biomedical harm; Poster presented at the Society of Behavioral Medicine; Washington, DC. 2007.
- Phillips KT, Rosenberg H. The development and evaluation of the harm reduction self-efficacy questionnaire. *Psychology of Addictive Behaviors*. 2008; 22:36–46. [PubMed: 18298229]
- Phillips KT, Stein MD, Anderson BJ, Corsi KF. Skin and needle hygiene intervention for injection drug users: Results from a randomized, controlled Stage I pilot trial. *Journal of Substance Abuse Treatment*. 43:313–321. (In Press). [PubMed: 22341554]
- Pollini RA, McCall L, Mehta SH, Vlahov D, Strathdee SA. Non-fatal overdose and subsequent drug treatment among injection drug users. *Drug and Alcohol Dependence*. 2006; 83:104–110. [PubMed: 16310322]
- Rhodes T, Mikhailova L, Sarang A, Lowndes CM, Rylkov A, Khutorskoy M, et al. Situational factors influence drug injecting, risk reduction and syringe exchange in Togliatti City, Russian Federation: a qualitative study of micro risk environment. *Social Science and Medicine*. 2003; 57:39–54. [PubMed: 12753815]
- Ritter A, Cameron J. A review of the efficacy and effectiveness of harm reduction strategies for alcohol, tobacco and illicit drugs. *Drug and Alcohol Review*. 2006; 25:611–624. [PubMed: 17132577]
- Rosenberg H, Phillips KT. Acceptability and availability of harm-reduction interventions for drug abuse in American substance abuse treatment agencies. *Psychology of Addictive Behaviors*. 2003; 17:203–210. [PubMed: 14498814]
- Sarang A, Rhodes T, Platt L, Kirzhanova V, Shelkovnikova O, Volnov V, et al. Drug injecting and syringe use in the HIV risk environment of Russian penitentiary institutions: qualitative study. *Addiction*. 2006; 101:1787–1796. [PubMed: 17156178]
- Seal KH, Kral AH, Gee L, Moore LD, Bluthenthal RD, Lorvick J, et al. Predictors and prevention of nonfatal overdose among street-recruited injection heroin users in the San Francisco Bay area, 1998–1999. *American Journal of Public Health*. 2001; 91:1842–1846. [PubMed: 11684613]
- Todd CS, Stibich MA, Stanekzai MR, Rasuli MZ, Bayan S, Wardak SR, et al. A qualitative assessment of injection drug use and harm reduction programmes in Kabul, Afghanistan: 2006–2007. *The International Journal of Drug Policy*. 2009; 20:111–120.
- Varga LM, Chitwood DD, Fernandez MI. Research Note: Factors associated with skin cleaning prior to injection among drug users. *Journal of Drug Issues*. 2006; 36:1015–1030.

- Vhalov D, Sullivan M, Astemborski J, Nelson KE. Bacterial infections and skin cleaning prior to injection among intravenous drug users. *Public Health Reports*. 1992; 107:595–598. [PubMed: 1410243]
- Williams AB. Women at risk: An AIDS educational needs assessment. *IMAGE: Journal of Nursing Scholarship*. 1991; 23:208–213.
- Zapka JG, Stoddard AM, McCusker J. Social network, support, and influence: Relationships with drug use and protective AIDS behavior. *AIDS Education and Prevention*. 1993; 5:352–366. [PubMed: 8297714]

Table 1

Themes Represented in Participants' Responses to Interview Test Shot Barriers Question

Theme <i>Exemplar Quote</i>	Number of responses including theme
Rushing/Hurrying/Time <i>"Too much in a hurry."</i> <i>"Cuz I usually just want to get it over with."</i>	21
Used Same Batch or Dealer Before/Dealer Knows Strength <i>"If I bought it and it's the same, if it's something different I will test it out."</i> <i>"They, the people I'm getting it from usually have the same stuff, they basically know what I'm getting."</i>	17
Not Enough Drugs/Wasting Drugs/Not Enough to Get High <i>"You're just testing it out and you don't get high from it. It would be stupid and detrimental."</i> <i>"Don't want to waste a dime when you're doing a quarter."</i>	13
Doesn't Think To/Just Don't Do It/I Don't Know <i>"Nothing would stop me from doing it, I just never thought of it before."</i> <i>"I just don't do it."</i>	12
Withdrawal <i>"If I was sick, that would get in the way; just want to hurry up and feel right or normal."</i> <i>"If I'm feeling bad, in a late state of withdrawal."</i>	11
Just Want to Get High <i>"Cuz I wanna get high."</i>	7
Tolerance for Drugs/Steady Use <i>"I have a huge immunity to heroin, high tolerance."</i> <i>"If I'm steady using it everyday I don't, but if I haven't used in a while I'll test it because I've overdosed before."</i>	4
The Drugs Are Not Strong Enough <i>"Drugs here are not strong enough. Don't warrant concern. That's my sole reason."</i> <i>"They don't have that kind of dope anymore."</i>	3
Bad Veins/Hard to Get a Hit <i>"Because it's hard for me to get a hit, I don't have any veins. Need to take advantage of it or I might not get any at all."</i>	2
Miscellaneous	7
Uncodable Response	4

Note. Number of definitions used for coding = 86 because four participants reported always doing test shots, so the barriers question was irrelevant to them. An additional 4 participants responded to the interview question, but their answers did not make sense and were noted as uncodable in the table above.

Table 2

Themes Represented in Participants' Responses to Skin Cleaning Barriers Question

Theme	Number of responses including theme
In a Hurry/Time/Impatience <i>"Time. If I'm in a hurry going somewhere."</i> <i>"Basically impatient, rushing..."</i>	29
Withdrawal <i>"If I'm going in withdrawal. If I'm real sick I don't do it. If not in withdrawal, I do it."</i>	17
No Supplies Present/No Access <i>"Not having them present when I inject."</i> <i>"Usually I'm getting high in the car, so I don't have access. Don't have a way to clean it."</i>	14
Doesn't Think To/Just Don't Do It/Don't Know <i>"Nothing stops me. Just don't do it."</i>	14
Environment <i>"Nothing would stop me from being able to. At work, sometimes the time frame, other people would walk in and catch me. If I'm in the bathroom and my kid's banging on the door I need to hurry up."</i>	5
Forgetting <i>"Just remembering; if it dawned on me I might do it some of the time."</i>	5
Laziness <i>"Lazy."</i>	2
Does Not Want To/See Necessity <i>"Don't think it's necessary."</i>	2
Miscellaneous	8
Uncodable ^a	5

Note. Number of definitions coded = 73 because 15 participants reported always cleaning their skin before injecting, so the barriers question was irrelevant to them.

^a Five respondents answered this questions by saying that they "always" clean their injection sites before injecting. However, inspecting their quantitative responses to questions about frequency of past skin cleaning, revealed that respondents did not "always" engage in this behavior.

Table 3**Themes Represented in Participants' Responses to Injection Safety Question**

Theme Exemplar Quote	Number of responses including theme
Using Clean or New Works/Avoiding Reusing Works <i>"I don't use my works more than 2–3 times."</i> <i>"Clean my rigs with bleach when [I'm] done or before I use someone else's."</i> <i>"I use fresh water, fresh everything; every time I use, I use new things"</i>	44
Avoid Sharing Needles or Works <i>"I don't use other people's cottons, cookers, needles."</i> <i>"Use my own needle, no one else's."</i> <i>"Try not to share."</i>	39
Clean Injection Site Before/After Injecting <i>"First of all, I clean with alcohol and whenever I'm done I clean with alcohol."</i> <i>"Wash my arm, make sure it's clean."</i> <i>"Cleaning site before, I rarely do it. When I'm done I will clean off with alcohol wipes, peroxide, or soap and water. Use antibiotic ointment, used to use vitamin E."</i>	27
Cleanliness Not Specific to Using Clean Works <i>"Try to be as clean as possible when I use."</i> <i>"Very precautions, sanitary, cleanliness."</i> <i>"Just use hot water to keep bacteria out."</i>	14
Nothing <i>"Nothing."</i> <i>"I take care of myself, start doing like it says, clean myself off. [Interviewer: Do you do anything now?] No."</i>	10
Use Needle Exchange <i>"Try to come here and get new needles."</i> <i>"Try not to get abscesses by coming here and getting clean works..."</i>	4
Reducing Use/Taking Smaller Hits <i>"Use a little more often instead of a lot at one time."</i> <i>"Don't do it often."</i>	3
Testing Strength of Drugs <i>"I test the dope before I inject it, see if I can handle it or not."</i> <i>"Test shots."</i>	2
Shoot with People You Know <i>"Know the people I shoot up with."</i> <i>"Be with my boyfriend, by ourselves."</i>	2
Miscellaneous	3
Uncodable	8

Note. Eight responses or significant portions of responses were considered uncodable because they did not address the question being asked.