According to a 1998 national survey, 2.4 million people in the United States age 12 and older have used heroin at some time in their lives, and 54 percent of them have injected heroin. The survey also found that 253,000 people used heroin within the prior year and that 130,000 used heroin within the prior month.1

Heroin belongs to a highly addictive class of drugs called “opiates,” central nervous system depressants that relieve pain without causing loss of consciousness.2 Natural opiates—all produced from the opium poppy—include morphine, opium, and codeine. Heroin is derived from morphine through a chemical process that triples its potency.

Heroin is the most commonly injected illegal drug. Pure heroin is a white powder with a bitter taste. Most street heroin is diluted, or “cut,” with additives such as other drugs, sugar, starch, powdered milk, or quinine, and sometimes with strychnine or other poisons. Heroin is usually distributed as a powder and may vary in color because of impurities resulting from the manufacturing process or the presence of such additives. Street names for heroin include smack, horse, H, junk, bomb, dope, and skag. Other terms, referring to the color and purity of types of heroin, include China white, mud, brown sugar, or black tar.2,3

Sharing injection equipment, also known as “works” or “outfits,” or fluids used to dissolve heroin can cause transmission of HIV, hepatitis B and C, and other blood-borne viruses. In 1999, 32 percent of adults and adolescents with AIDS in the United States reported injection drug use as a risk factor: 20 percent reported infection through injection drug use, and 9 percent were men who reported both injection drug use and sex with other men as risk factors.4

In October 2000, 10 percent of adults and adolescents with AIDS in California reported infection through injection drug use, and 9 percent were men who reported both injection drug use and sex with other men as risk factors.5

Use and Effects

Heroin can be used in a variety of ways, depending on purity and preference. Heroin is most often injected into a vein (“mainlining”), into a muscle (“muscle popping”), or under the skin (“skin popping”). Powdered heroin may also be snorted or smoked in a pipe, in a marijuana or tobacco cigarette, or by inhaling the smoke through a straw, a practice known as “chasing
the dragon.” Intravenous injection provides the greatest intensity and the fastest onset of euphoria, taking only a few seconds to result in a “high.” Intramuscular injection, smoking, and sniffing heroin usually produces a high within five to 15 minutes. However, heroin is addictive regardless of the method of administration.²

Soon after ingesting heroin, users typically feel a surge of pleasurable sensation called a “rush.” The intensity of the rush is a function of the dosage level and the user’s level of tolerance. Effects include feelings of euphoria, contentment, and wellbeing. Following the initial rush, users enter a drowsy state of semi-consciousness, known as “going on the nod.” Other effects include slowed and slurred speech, constricted pupils, droopy eyelids, decreased sexual interest, impaired vision, itching, nausea, vomiting, constipation, and general slowness.²

Ingesting too much heroin can cause an overdose, during which breathing slows and the body shuts down. Effects of a heroin overdose include shallow breathing, clammy skin, convulsions, coma, and possible death.² Chances of overdose increase when heroin is used in combination with alcohol, cocaine (a combination often called a “speedball”), barbiturates, or benzodiazepines, a class of antianxiety drugs.⁶

Tolerance and Dependence

Regular heroin users develop increased tolerance to the drug, which means they must use more heroin to achieve the same intensity or effect. The more often heroin is used, the more quickly tolerance develops. In regular heroin users, physical or psychological withdrawal may occur as early as a few hours after the most recent ingestion, or “fix,” and can cause distress or impair important areas of functioning. People who experience withdrawal often crave and use heroin to prevent or diminish withdrawal symptoms, which include restlessness, muscle and bone pain, insomnia, diarrhea, vomiting, cold flashes with goose bumps, and uncontrollable kicking movements. Physical withdrawal symptoms usually subside about a week after the last fix, but many users report feeling unable to function in daily activities for several months after discontinuing use, indicating psychological or emotional heroin dependence that outlasts the physical dependence.⁷,⁸

Increased tolerance and withdrawal symptoms are two indicators of substance dependence, also characterized by behavioral components, including making unsuccessful attempts to stop or control use and continuing use despite detrimental effects.⁹ As dependence develops, heroin users gradually spend increased time and energy obtaining and using the drug, disrupting other areas of life such as relationships and employment.²

Injection Practices and HIV Risks

Preparing heroin for injection, or “shooting up,” consists of several steps. The heroin must first be dissolved in a water solution by heating it in a “cooker,” usually a metal bottle cap, a spoon, or the bottom of an aluminum can. Heroin users often use syringes to add water to the cooker. After the drug dissolves, a small cotton ball is placed into the cooker to filter out impurities in the solution. The user then draws the solution into the syringe through the cotton. When sharing a heroin solution, the user preparing it, often called the “donor,” typically divides the solution into individual doses and transfers them into the barrels of the other injectors’ syringes. Injecting the drug solution into the back end of the syringe is called “backloading”; injecting the solution into the front end of the syringe after its needle has been removed is called “frontloading.” While inject-
Related Issue: Needle Exchange

Although most injection drug users are aware of the risks of needle sharing, clean needles are often not available or affordable. Needle exchange programs provide sterile needles in exchange for used ones with the goal of lowering the rate of transmission of HIV and other blood-borne infections.

Research suggests that needle exchange programs decrease HIV risk among injection drug users. A study of the San Francisco needle exchange program found that clients were less likely than other injection drug users to report sharing needles or rinse water, less likely to reuse needles, and more likely to clean their skin before injecting. In a study of five needle exchange programs in New York City, needle sharing dropped from 26 percent to 3 percent.

Research indicates that needle exchange programs are an effective HIV prevention measure, do not increase drug use, and sometimes decrease drug use by referring clients to drug treatment programs. However, there is a ban on federal funds for such programs. As a result, there are relatively few needle exchange programs in the United States.

In California, a legal needle exchange program can be established in a municipal area only after the city council declares a public health state of emergency. Several cities in California—including Berkeley, Los Angeles, San Francisco, and Santa Cruz—have adopted emergency ordinances that allow needle exchange programs. In September 2000, San Diego declared a state of health emergency but did not initiate a needle exchange program.

Many of the cities that initiated needle exchange programs early in the HIV epidemic now report low rates of infection among injection drug users. One study found that rates of HIV infection increased by 6 percent per year in cities without needle exchange programs, while infection rates decreased by 6 percent in cities with such programs. Most needle exchange programs also provide their clients with additional public health and social services, which may include providing referrals to substance abuse treatment programs, HIV counseling and testing, tuberculosis skin testing, screening for sexually transmitted diseases (STDs), and primary health care.

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Many of the long-term health problems related to heroin use are caused by the practice of injecting.
harm reduction strategy may be to heat drug solutions for at least 15 seconds prior to injection.\textsuperscript{15}

**Methadone and HIV Prevention**

Research suggests that entering a substance abuse treatment program is an effective HIV prevention intervention for injection drug users.\textsuperscript{16} Methadone, a long-acting synthetic opioid, is the medication used most frequently to treat heroin addiction.\textsuperscript{17} Many clients of methadone maintenance treatment programs have ceased to inject drugs or have decreased the frequency with which they inject. Methadone reduces cravings for opiates, helps daily functioning, has negligible side effects, and can be taken orally once a day.\textsuperscript{17} Methadone programs may also provide counseling, vocational skills development, and medical support services.\textsuperscript{18} Methadone maintenance therapy requires almost daily interaction between clients and providers, creating frequent opportunities to encourage HIV prevention.\textsuperscript{19}

A study of 2,966 drug users undergoing methadone treatment found a 50 percent reduction in drug use and significant reductions in sexual risk behaviors in the 12 months after treatment.\textsuperscript{20} In a Philadelphia study, 4 percent of injection drug users taking methadone became infected with HIV, while 22 percent of those not in treatment became infected.\textsuperscript{21}

Nonetheless, there is evidence that people in methadone maintenance treatment programs often continue to engage in high-risk sexual behavior.\textsuperscript{22,23} Some heroin users in methadone treatment programs also use other substances that can contribute to sexual risk-taking.\textsuperscript{24,25} Researchers suggest that incorporating HIV prevention education into substance abuse treatment programs may be effective in reducing sexual risk behaviors.\textsuperscript{22,23}

Some people undergoing methadone treatment gradually reduce methadone intake until they achieve abstinence, while others remain dependent on it indefinitely. A major reason that methadone maintenance therapy is controversial is the belief that substituting dependence on one addictive drug for another inadequately addresses dependence. Also, after discontinuing methadone treatment, many people relapse into heroin use. Adding to the controversy are concerns about limited access to methadone programs, their cost, a lack of other support services, and the rigidity of some programs.\textsuperscript{26}

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For more information related to heroin, refer to the following issues of PERSPECTIVES: Sex Partners of Injection Drug Users (Volume 8, Number 5), October 1999; Substance Abuse Treatments (Volume 8, Number 2), April 1999; and Injection Drugs & Harm Reduction (Volume 6, Number 6), September 1997.
Implications for Counseling

HIV test counselors must be as knowledgeable and comfortable talking about injection drug use and needle sharing behaviors as they are discussing sexual behavior. It is not enough for counselors to simply say, “Rinse three times with water, three times with bleach, and three times with water again.” Counselors need to initiate a conversation with clients about needle sharing practices.

To assess a client’s needle use, ask about it directly when the topic of drug use comes up. Anytime a client says that he or she uses injectable drugs such as heroin, ask about needle use. Once needle use is established, it is helpful to ask an open-ended question about the client’s risk behaviors and knowledge of HIV risk, for example, “How would you assess your level of risk for HIV infection?”

Reducing Injection Risks

Although substance abuse treatment is an effective way to reduce HIV risk among injection drug users, unless and until a client is in treatment, it is most appropriate for HIV counselors to focus on reducing the harm caused by heroin use and, in particular, needle sharing.

Just as it is important in the process of behavior change for a client to discuss the meaning and value of a risky sex act, it is also important for a client to discuss the meaning and value of needle sharing. Some clients consider needle sharing to be an intimate experience and may perceive that they can reduce their risk for HIV infection only by sacrificing this intimacy.

If a client feels this kind of intimacy is necessary, it may be useful to suggest sharing needles only with people who have tested HIV-negative, or to get into the habit of going first when sharing. If one of these suggestions is realistic for the client, help him or her by asking, “How would you do that?” and “Is that realistic for you?”

Finally, discuss safer needle sharing strategies, including disinfecting needles with bleach and water and wiping the skin with alcohol before injection to reduce the risk of abscesses. These harm reduction discussions give clients options that may be more realistic than complete abstinence from needle sharing.

Although many injection drug users are aware that needle sharing poses high risks for HIV infection, far fewer are aware of the HIV risks of sharing other injection paraphernalia (“indirect sharing”). Explain that sharing rinse water, cottons, and cookers can also lead to transmission of HIV and other blood-borne infections, and be sure to address harm reduction as part of this discussion.

A Counselor’s Perspective

“When I started counseling, it was hard for me to remain client-centered with injection drug users, but I learned that the counseling session is not about me; it is about my clients and how I can help them.”

A Counselor's Perspective

“It’s easy to pigeon-hole clients into their primary risk groups. But a client who is an injection drug user may also be at risk for HIV through unsafe sex.”

A Counselor’s Perspective

“I don’t have a clear cut-off point where I say, ‘I’m not working with injection drug users.’ In addition, work with clients to increase frequency of condom use, but recognize that for a variety of reasons, condom use may be difficult to initiate.
Returning for Results

It is important for counselors to discuss returning for results with heroin-using clients because they may have chaotic lifestyles that make it difficult to keep appointments. Some counseling and testing sites provide incentives, such as food vouchers or money, to encourage clients to return for results.

Heroin-using clients who return for their disclosure sessions may be at particular risk for showing up “high,” possibly because it helps to soothe their anxiety of receiving test results. While counselors may consider it inappropriate for clients to be high during a session, it may be the only way some clients are willing or able to return for test results.

People who are high on heroin are often able to function well enough to carry on a coherent conversation. Unless there are other regulations prohibiting counseling while they are intoxicated, counselors should not deny services to clients who possess the ability to be coherent and to remain awake. Some clients who are high on heroin may “nod,” or doze off, for a few moments. They may mumble as they speak and

References

Case Study

Jeff is a 26-year-old heterosexual man who injects heroin. This is Jeff’s fourth HIV antibody test, but he has never before returned for results. Jeff says he used to share needles, but that during the last year, he has always used clean needles, except for two occasions. Jeff says that he stopped needle sharing because he “saw people getting sick and disappearing.”

Intervention

Begin by giving Jeff positive reinforcement for testing for HIV. Acknowledge that it is difficult for some people not only to come in to test but also to return for results. Praise Jeff for taking the initiative to stop sharing needles with other people, and discuss how he managed to achieve this. What was the easiest part? What was the hardest part? How did he get through it? Also, ask Jeff what advice he can give the counselor to help other clients learn to stop sharing needles.

Doing all of these things is beneficial for both counselor and client. It gives the counselor an “inside” perspective on how someone stops needle sharing while providing Jeff with the positive experience of being seen as someone who has expertise worth sharing. This process also helps Jeff articulate and think about how he has taken this important step in his life. Articulating his experience will help to reinforce its importance for Jeff and will help the counselor identify and strengthen any weaknesses in Jeff’s motivation and support system.

Ask Jeff how he obtains clean needles. If there is a local needle exchange program and Jeff does not already know about it, provide a referral. If he says he cleans his needles himself, make sure he knows the procedure to clean needles most effectively. Explore with Jeff what happened on the two occasions in which he shared needles, for example by saying, “It looks like you have taken some important steps to avoid sharing needles. Could you talk about what was different for you those two times that you shared?” Depending on Jeff’s answers, ask what he thinks he can do to avoid needle sharing the next time he is in a similar situation. Ask him if he thinks his plan is a realistic one. If not, ask him if he can think of a plan that would be realistic.

As with other clients, it is important to assess Jeff’s sexual risks. Ask him if he has a primary sex partner or if he has sex with multiple partners. If Jeff says that he engages in unprotected sex with multiple partners, ask him if he is concerned about HIV infection. Discuss his risks for HIV and other sexually transmitted diseases (STDs), as well as his risks for infecting his sex partners. Explore Jeff’s motivations for changing or not changing his risk behavior. Ask if he can commit to reducing his risk, and if so, ask him how he is willing to achieve this.

Before ending the session, discuss any obstacles that may keep him from returning for test results. Explore with him what he thinks he would do if he tested positive. Tell Jeff about the support services for which he would be eligible, and ask him how he would feel about quitting heroin if he tested positive.

Treatment and Recovery

Because substance abuse treatment is an effective HIV prevention intervention, it is useful for counselors to discuss treatment with heroin-using clients and to provide referrals for additional treatment resources. As part of this process, it is important for the counselor to take cues from the client. If the client is interested in treatment, discuss treatment options such as methadone maintenance treatment programs, residential treatment, group therapy, or 12-step programs. However, if the client is not interested in treatment, be flexible enough to let go of that option and remain neutral. Treatment is only effective for people who enroll in a treatment program. The client may benefit from other types of referrals, including resources that may help provide food, clothing, housing, employment, or other necessities.

When counseling clients who are recovering heroin users, it is more useful to focus on the present than on past risk behaviors. For example, discuss current risks and access to support networks. Ask the client how receiving a positive HIV antibody test result would affect his or her recovery, and discuss plans for relapse prevention in the event of a positive result. If the client is overly anxious about testing, the counselor may suggest that it may not be the right time to test and encourage the client to return when testing would not be a major threat to his or her recovery.
Test Yourself

Review Questions
1. Which of the following is a short-term effect of heroin use? a) a surge of pleasurable sensations or euphoria; b) a state of drowsiness; c) decreased sexual drive; d) all of the above.
2. True or False: Heroin is the most commonly injected illegal drug in the United States.
3. Which of the following strategies can help injection drug users reduce risk for becoming infected with HIV? a) using a clean needle when injecting; b) labeling injection equipment to reduce the likelihood of accidental sharing; c) heating drug solutions for at least 15 seconds prior to injection; d) all of the above.
4. True or False: The proper way to clean a used needle is to rinse three times with water, flush with bleach three times for 30 seconds each time, then rinse three more times with fresh water.
5. What is the name of the medication most frequently used to treat heroin addiction? a) morphine; b) valium; c) methadone; d) cocaine.
6. True or False: Research indicates that needle exchange programs do not contribute to decreases in the number of HIV infections in cities where they operate.
7. In 1999, what percentage of adults and adolescents with AIDS in the United States reported injection drug use as an HIV risk factor? a) 5 percent; b) 20 percent; c) 50 percent; d) 90 percent.
8. True or False: Injection drug users who share cookers are not at risk for HIV infection as long as they do not share needles.

Discussion Questions
1. How can counselors stay abreast of appropriate heroin-related referrals, including the availability of local needle exchange programs and substance abuse treatment programs?
2. How can counselors become better informed about the details of harm reduction related to injection drug use?
3. How can counselors respond effectively to clients who are actively injecting heroin and have no intention to stop doing so?
4. How can counselors apply harm reduction interventions to their sessions with clients who inject heroin?
5. What are some generalizations and assumptions about heroin users that may hinder a counselor’s effectiveness during a session with a heroin-using client?

Answers
1. d.
2. True.
3. d.
4. True.
5. c.
6. False. Many of the cities that initiated needle exchange programs early in the HIV epidemic now report decreased rates of infection among injection drug users, their sex partners, and their children.
7. b.
8. False. Although needle sharing is the primary causal link between injection drug use and HIV infection, sharing of other drug injection equipment—including cookers, cotton filters, and rinse water—can also result in HIV transmission.
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