What is behind America's heroin epidemic?

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Credit: AI-generated image (disclaimer)

For something so potentially deadly, it has some poetic nicknames: Black Pearl, China White, Brown Crystal.

Heroin first came into being in 1874 when English chemist C.R. Alder Wright added two acetyl groups to the morphine molecule found in the flowering plant Papaver somniferum, the variety of poppy that gives the world both opium and poppy seeds. Scientists had high hopes that heroin

would be a safer and less addictive alternative to morphine, which had left tens of thousands of soldiers dependent on it after the Civil War. At the dawn of the 20th century, philanthropic societies even dispensed free samples of heroin to morphine addicts. Unfortunately, the wonder drug, when injected, turned out to be two to four times more potent than morphine and highly addictive.

While recreational drugs such as LSD, cocaine, crack, and meth have been more prominent in the news in recent decades, heroin has once again surged into the spotlight. Are reports of "skyrocketing" heroin addiction overstating the case?

"Heroin abuse is still relatively rare in the United States," says Shannon Monnat, assistant professor of rural sociology, demography, and sociology at Penn State. "In 2013, about 681,000 individuals aged 12 and older reported using heroin, making it the least commonly used illicit drug in America. However, the percentage of individuals who report using heroin is higher today than it was just a decade ago, when 379,000 individuals aged 12 and older reported using it."

According to Monnat, the rise in heroin use is a result of several factors that have converged over the past two decades, including abuse of prescription painkillers, which are also made from the opium poppy and are essentially a legal form of heroin. "Prescription painkiller abuse is actually the fastest growing drug problem in America," she says.

Prior to the mid-1990s, prescriptions of painkiller narcotics were restricted almost exclusively to terminal cancer patients and victims of severe accidents, but "the emergence of OxyContin in 1996 changed the game," Monnat says. OxyContin, a sustained-release prescription narcotic that is highly likely to lead to addiction and abuse, was aggressively marketed throughout the late 1990s to combat a growing 'pain epidemic' in the U.S.

"As the medical field and the FDA became concerned about the abuse and addiction potential of this drug, and rashes of accidental prescription painkiller overdose deaths popped up across the country, many physicians became wary about prescribing it long-term and in large doses," notes Monnat. However, "a small group of rogue doctors saw the entrepreneurial possibilities and capitalized on the growing addiction problem by setting up "pill mills" in states like Kentucky, Ohio, and Florida, where patients could pay large sums of cash to receive a quick prescription and retrieve the pills right on site. Between 1996 and 2000, sales of OxyContin surged from $48 million to $1.1 billion."

Over the past decade, health care officials and government leaders have tried to combat the prescription opioid epidemic by cracking down on pill mills, and in 2013, the FDA approved a new "abuse deterrent" form of OxyContin designed to deter snorting and injecting by making the drug more difficult to crush, break, or dissolve. "Although these efforts have resulted in recent declines in prescription painkiller abuse, the unintended consequence of these strategies has been an increase in heroin use," says Monnat. "Individuals who became addicted to painkillers soon found that heroin was easier to get and cheaper. In fact, heroin is now cheaper than a six-pack of beer in most states. All current signs point to heroin abuse being a long-term problem in the U.S."

Who is the typical heroin addict? Most people have the wrong mental picture, says Monnat. Popular culture tends to portray heroin as an inner-city African-American problem. "To be sure, heroin use remains a big problem in inner cities where educational quality is low and where there are few economic opportunities. But whites are actually more likely than blacks to use heroin. The 'typical' heroin user is an unmarried 18- to 25-year-old white male with low educational attainment and household income under $20,000."

However, this isn't the full picture, either, says Monnat. About half of

heroin users are employed and about a quarter have children living with them. "What may surprise some people is that the biggest surge in heroin use over the past ten years has been among white women," she says. "Moreover, heroin use is actually more prevalent in small cities and rural towns than in large metropolitan areas. Many people using heroin are also abusing multiple other substances, especially prescription painkillers. About two-thirds of adults who have ever used heroin have also abused prescription painkillers (e.g., OxyContin, oxycodone, hydrocodone, Percocet, and codeine) at some point in their lives."

The key to preventing addiction is to prevent initiation, says Monnat. "Heroin is a highly addictive substance that creates up to 100 times more endorphins—a 'feel good' hormone—than what the body can produce naturally. Once the body is introduced to these artificial endorphins, it stops producing its own, and the user [who tries to stop using] must endure terrible withdrawal symptoms, including pain, diarrhea, nausea, and vomiting. The only way to compensate for those lost endorphins and to stop the withdrawal symptoms is to take more and more of the opiate. This is the vicious cycle of heroin and prescription painkiller addiction."

Monnat advises that patients who are not terminally ill or seriously injured should avoid taking a prescription opioid unless absolutely necessary, and even then, should request the lowest effective dose.

A focus on adolescents is also important in preventing addiction, she adds. "We know that most substance abuse begins in adolescence, when the brain is highly susceptible to addiction. So preventing adolescent initiation of any type of opiate use is a key to stopping the current epidemic." Physicians who do prescribe painkillers to adolescents should require regular follow-up visits throughout the course of the prescription and should encourage parents to administer the pills at the recommended timing and dosage, she says. "Any unused prescriptions should be returned to the pharmacy rather than thrown away or saved in the family

medicine cabinet."

While some new medications show promise in curbing addiction, they are often not widely available, or are expensive and not covered by insurance. "Federal, state, and local governments must consider subsidizing these treatments and increasing their availability throughout the U.S., particularly in rural areas where heroin overdoses have surged and treatment services are already sparse," says Monnat. "Finally, in an effort to reduce the rate of accidental death from heroin and prescription painkiller overdose, all emergency medical providers should carry Naloxone, a special narcotic drug that reverses the overdose. Naloxone has been available from pharmacies with a doctor's prescription for quite some time, but many states have only recently allowed drugstores to dispense it to anyone. Unfortunately, it is still not widely available."

For those who are already addicted, recovery is a long and difficult road. If we're serious about reversing the current trend in heroin use, says Monnat, "we need to view heroin addiction as a physical and mental health problem that requires intensive treatment and support, instead of criminalizing it."

Provided by Pennsylvania State University

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