



Heroin use and heroin use risk behaviors among nonmedical users of prescription opioid pain relievers – United States, 2002–2004 and 2008–2010

Christopher M. Jones*

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Division of Unintentional Injury Prevention, 4770 Buford Highway, Atlanta, GA 30341, United States

ARTICLE INFO

Article history:

Received 9 September 2012
Received in revised form 8 November 2012
Accepted 14 January 2013
Available online 12 February 2013

Keywords:

Heroin
Prescription opioid use
Prescription opioids
NSDUM
National Survey on Drug Use and Health

ABSTRACT

Background: Heroin use and overdose deaths have increased in recent years. Emerging information suggests this is the result of increases in nonmedical use of opioid pain relievers and nonmedical users transitioning to heroin use. Understanding this relationship is critically important for the development of public health interventions.

Methods: Combined data from the 2002–2004 National Surveys on Drug Use and Health were compared to the 2008–2010 surveys to examine patterns of heroin use and risk behaviors among past year nonmedical users of opioid pain relievers.

Results: Between 2002–2004 and 2008–2010, past year heroin use increased among people reporting past year nonmedical use (PYNMU) of opioid pain relievers ($p < 0.01$), but not among those reporting no PYNMU. Frequent nonmedical users – people reporting 100–365 days of PYNMU – had the highest rate of past year heroin use and were at increased risk for ever injecting heroin (aOR 4.3, 95% CI 2.5–7.3) and past year heroin abuse or dependence (aOR 7.8, 95% CI 4.7–12.8) compared to infrequent nonmedical users (1–29 days of PYNMU). In 2008–2010, 82.6% of frequent nonmedical users who used heroin in the past year reported nonmedical use of opioid pain relievers prior to heroin initiation compared to 64.1% in 2002–2004.

Conclusions: Heroin use among nonmedical users of opioid pain relievers increased between 2002–2004 and 2008–2010, with most reporting nonmedical use of opioid pain relievers before initiating heroin. Interventions to prevent nonmedical use of these drugs are needed and should focus on high-risk groups such as frequent nonmedical users of opioids.

Published by Elsevier Ireland Ltd.

1. Introduction

Drug overdose deaths involving prescription opioid pain relievers such as oxycodone, hydrocodone, fentanyl, and methadone have increased dramatically since 1999 (Paulozzi et al., 2011). The rate of opioid pain reliever overdose deaths in the United States in 2009, 5.0 per 100,000 population, was nearly four times the rate in 1999, 1.4 per 100,000 (Centers for Disease Control and Prevention, 2012). Morbidity associated with the nonmedical use of these drugs has also increased over the last decade (Substance Abuse and Mental Health Services Administration (SAMHSA), 2010; Substance Abuse and Mental Health Services Administration, 2012a). Recent research examining the frequency of nonmedical use of pain relievers found that chronic or frequent nonmedical use has increased in the US, while less frequent use remained stable. This rise in frequent nonmedical use was paralleled by an increase in overdose deaths during the same time period. Over 2 million people in the

US now report nonmedical use of opioid pain relievers for 100 days or more in the past year (Jones, 2012).

Use of the illicit opioid heroin has been increasing as well, with an estimated 400,000 people reporting past year use in 2002 compared with over 600,000 in 2010 (SAMHSA, 2011). Further, heroin-related overdose deaths have been increasing since 2007 after remaining stable between 1999 and 2006 (CDC, 2012). Emerging evidence suggests a connection between increases in nonmedical use of opioid pain relievers and increases in heroin use in the US (Lankenau et al., 2012; Peavy et al., 2012). The scientific literature examining the relationship between nonmedical use of opioids and heroin use has generally focused on people entering opioid treatment programs or urban injection drug users, and typically only provides estimates of lifetime, past year, or past month use of heroin among nonmedical users of opioid pain relievers (Daniulaityte et al., 2006; Cleland et al., 2011; Lankenau et al., 2007, 2012; Rees Davis and Johnson, 2008; Canfield et al., 2010; Brands et al., 2004; Havens et al., 2007; Moore et al., 2007; Rosenblum et al., 2007; Potter et al., 2004; Carise et al., 2007; Young and Havens, 2011; Grau et al., 2007; Cicero et al., 2012).

* Tel.: +1 770 488 3944; fax: +1 770 488 1317.
E-mail address: cjones@cdc.gov

A 2007 study of patients in methadone maintenance programs found that 33.0% of primary abusers of opioid pain relievers had ever used heroin and 13.0% had used heroin in the past 30 days; among people whose primary drug of abuse was heroin, 69.0% had ever used opioids and 39.0% had used one in the past 30 days (Rosenblum et al., 2007). In another study, nearly 30.0% of opioid treatment program patients surveyed between 2005 and 2009 had used opioid pain relievers and heroin within the past 30 days, and those interviewed in later years of the survey were more likely to use both (Cleland et al., 2011). A small study of urban nonmedical users of opioids found that poly-opioid use was a significant predictor for transitioning to heroin and/or injection drug use (Gruau et al., 2007). A 2012 study of young urban injection drug users found that 86% had used opioid pain relievers nonmedically prior to using heroin, and their initiation into nonmedical use was characterized by three main sources of opioids – family, friends, or personal prescriptions (Lankenau et al., 2012). Studies have also found heroin use to be a predictor for past year nonmedical use of opioids (Tetrault et al., 2008; Becker et al., 2008; Back et al., 2010) and past year opioid pain reliever abuse or dependence (Becker et al., 2008).

Understanding the relationship between nonmedical use of opioid pain relievers and heroin use is critical for the development of effective public health interventions. Considering the large number of nonmedical users of opioid pain relievers, even a small shift to heroin use could have significant public health implications such as increased transmission of human immunodeficiency virus (HIV) and hepatitis C virus (HCV) (Strang et al., 1998; Schoenbaum et al., 1989; Klevens et al., 2012) due to the higher percentage of people reporting injection as the usual route of administration for heroin compared to opioid pain relievers. A recent report found 69.7% of substance abuse treatment admissions for heroin reported injection as the usual route of administration compared to 14.3% for opioid pain relievers (SAMHSA, 2012d).

This study attempts to build on the prior literature by (1) describing patterns of heroin use among nonmedical users of opioid pain relievers in the US in 2002–2004 compared to those in 2008–2010; (2) examining the relationship between initiation of opioid pain relievers and heroin among the two cohorts; (3) determining the association between frequency of nonmedical use of opioids and heroin use and risk behaviors; and (4) identifying populations at greatest risk for public health consequences related to use of heroin and opioid pain relievers.

2. Methods

2.1. Data source

The National Survey on Drug Use and Health (NSDUH), conducted by SAMHSA, is an annual survey that provides estimates on the use of drugs, alcohol, and tobacco among the non-institutionalized U.S. civilian population age 12 or older. The NSDUH employs a 50-State design with an independent, multistage area probability sample for each of the States and the District of Columbia. Each State's sample is approximately equally distributed among the age groups: 12–17 years, 18–25 years, and 26 years and older. The survey uses a combination of computer-assisted personal interviewing and audio computer-assisted self-interviewing to improve reporting about drug use and other sensitive behaviors. Detailed methods of the NSDUH have been reported elsewhere (SAMHSA, 2011). For this study, data from the NSDUH public use files were combined for years 2002–2004 (unweighted $n = 164,911$) and 2008–2010 (unweighted $n = 169,384$) to improve the precision of estimates and detection of differences among subpopulations. Examining trends prior to 2002 were not possible due to methodological differences that affect the comparability of the 2002–2010 estimates with estimates from prior surveys (SAMHSA, 2011). Weighted interview response rates were 77–79% for 2002–2004 and 74–76% for 2008–2010.

2.2. Study variables

2.2.1. Substance use. In the NSDUH, respondents are asked a series of questions to determine their use of specific substances. Past year heroin use is defined as use of heroin within the 12 months prior to the survey. Past year nonmedical use (PYNMU) of prescription pain relievers is defined as use in the past 12 months

without a prescription or use for the feeling or experience the drug causes. In the NSDUH, drugs in this category include opioid pain relievers and select barbiturate combination products. To limit the analysis to past year nonmedical users of opioid pain relievers, respondents reporting PYNMU of only barbiturate combination pain relievers were excluded (2002–2004 unweighted $n = 26$; 2008–2010 unweighted $n = 10$). In the survey, respondents are also asked to report the number of days in the past year they used each substance (frequency of past year use) and their age of first use for each substance.

2.2.2. Heroin use risk behaviors and heroin availability. Individuals who report substance use are asked a set of structured questions modeled after The Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (American Psychiatric Association, 1994) criteria for abuse (interference with responsibilities, hazardous use, use associated with legal problems, relationship problems) and dependence (time spent using the substance, inability to set limits on use, taking larger amounts or using more often, inability to cut down or stop using, continued use despite problems, reduced or eliminated involvement in important activities, withdrawal). These questions are designed to identify respondents with past year abuse or dependence on specific substances. In addition, individuals who used heroin are asked about their route(s) of administration. Respondents are asked if they ever: used a needle to inject heroin, smoked heroin, sniffed heroin, or used heroin in some other way. Individuals are also asked to list other drugs they ever injected (including opioid pain relievers). Questions to determine heroin availability are also included in the survey. Respondents are asked how difficult or easy it would be for them to get heroin, with response options of: probably impossible, very difficult, fairly difficult, fairly easy, or very easy.

2.2.3. Sociodemographics. Sociodemographic characteristics from NSDUH included in this analysis are sex; age (12–17 years, 18–25 years, and 26 years and older); race/ethnicity; total family income (less than \$20,000, \$20,000–49,999, \$50,000–74,999, and \$75,000 or more); and county type (large metro, small metro, and non-metro). Each of these characteristics has been shown to have an impact on nonmedical use of opioid pain relievers in the scientific literature (Tetrault et al., 2008; Becker et al., 2008; Back et al., 2010).

2.3. Statistical analysis

All analyses were conducted with SPSS version 20 Complex Samples to account for the design, nonresponse, and weighting of the NSDUH. PYNMU of opioid pain relievers was recoded into a new variable to classify frequency of past year nonmedical use into four categories: no PYNMU, 1–29 days, 30–99 days, and 100–365 days of nonmedical use. Frequency of past year nonmedical use categories were chosen to enable comparisons between people reporting no past year nonmedical use, infrequent nonmedical use, and frequent nonmedical use. Prior research indicates that frequent nonmedical use of opioid pain relievers has increased in recent years while less frequent use remained stable (Jones, 2012). Average annual estimates of past year heroin use stratified by frequency of PYNMU for 2002–2004 and 2008–2010 were produced and converted to rates per 1000 population age 12 years and older in each frequency of PYNMU category. Two-tailed t -tests were used to test for significant differences in the average annual rates between the two time periods among all past year heroin users, by frequency category, sex and age. Significance was determined at the $p < 0.05$ level.

To compare age of first use of heroin and opioid pain relievers by frequency of PYNMU between the two time periods, a new age of first use variable was computed to classify age of first use into three categories: age of first use of heroin before first use of opioid pain relievers, age of first use of heroin same as first use of opioid pain relievers, and age of first use of opioid pain relievers before first use of heroin.

Logistic regression analyses were conducted to examine the relationship between frequency of PYNMU of opioids and past year heroin use, ever injecting heroin, ever injecting opioid pain relievers, past year heroin abuse or dependence, past year opioid pain reliever abuse or dependence, and heroin availability. For this analysis, heroin availability was recoded into two categories: heroin fairly or very easy to obtain and otherwise. Adjusted odds ratios, with 1–29 days of PYNMU as the reference group, were produced. Adjustment was made for age, sex, race/ethnicity, total family income, and county type.

3. Results

3.1. Past year heroin use

Table 1 contains the average annual estimates for past year nonmedical use of opioid pain relievers and heroin use by sex and age among people 12 years and older in the 2002–2004 and 2008–2010 surveys. Table 2 shows the average annual estimates of past year heroin use among people 12 years and older for 2002–2004 and 2008–2010 by frequency of PYNMU of opioid pain relievers. On average, an estimated 379,000 people reported past year heroin use

Download English Version:

<https://daneshyari.com/en/article/7507053>

Download Persian Version:

<https://daneshyari.com/article/7507053>

[Daneshyari.com](https://daneshyari.com)