International Journal of Drug Policy 31 (2016) 25–31

Contents lists available at ScienceDirect

International Journal of Drug Policy

journal homepage: www.elsevier.com/locate/drugpo

Commentary

Harm reduction for young people who use prescription opioids extra-medically: Obstacles and opportunities

Brandon D.L. Marshall [a,*], Traci C. Green [b,c], Jesse L. Yedinak [a], Scott E. Hadland [d,e,f]

[a] Department of Epidemiology, Brown University School of Public Health, 121 South Main Street, Box G-S-121-2, Providence, RI 02912, USA
[b] Boston University School of Medicine, Department of Emergency Medicine, 771 Albany Street, Room 1208, Boston, MA 02118, USA
[c] The Warren Alpert School of Medicine of Brown University, Rhode Island Hospital, 55 Claverick Street, Providence, RI 02903, USA
[d] Division of Adolescent/Young Adult Medicine, Department of Medicine, Boston Children's Hospital, 333 Longwood Avenue, Boston, MA 02115, USA
[e] Department of Pediatrics, Harvard Medical School, 25 Shattuck Street, Boston, MA 02115, USA
[f] Department of Health Policy & Management, Harvard T. H. Chan School of Public Health, 677 Huntington Avenue, Boston, MA 02115, USA

ARTICLE INFO

Article history:
Received 24 September 2015
Received in revised form 13 January 2016
Accepted 22 January 2016

Keywords:
Youth
Adolescence
Harm reduction
Prescription opioids
Prescription drug misuse

ABSTRACT

Extra-medical prescription opioid (EMPO) use – intentional use without a prescription or outside of prescribed parameters – is a public health crisis in the United States and around the world. Epidemiological evidence suggests that the prevalence of EMPO use and adverse sequelae, including opioid overdose and hepatitis C infection, are elevated among people aged 18–25. Despite these preventable health risks, many harm reduction interventions are underutilized by, or inaccessible to, EMPO-using youth. In this commentary, we describe key harm reduction strategies for young people who use prescription opioids. We examine individual, social, and policy-level barriers to the implementation of evidence-based approaches that address EMPO use and related harms among young people. We highlight the need for expanded services and new interventions to engage this diverse and heterogeneous at-risk population. A combination of medical, social, and structural harm reduction interventions are recommended. Furthermore, research to inform strategies that mitigate particularly high-risk practices (e.g., polysubstance use) is warranted. Finally, we discuss how the meaningful involvement of youth in the implementation of harm reduction strategies is a critical component of the public health response to the prescription opioid epidemic.

Introduction

Concomitant with a dramatic rise in the prescribing and sale of opioid pain relievers, extra-medical prescription opioid (EMPO) use – defined as intentional opioid use without a prescription or use of one's own prescription outside of prescribed parameters – is one of the fastest growing forms of drug use in the United States (National Institutes on Drug Abuse, 2011). The prevalence of EMPO use is highest among young people aged 18–25, with an estimated 6 million (1 in 5) young adults reporting lifetime use and 2.7 million (1 in 12) reporting use in the past year (Center for Behavioral Health Statistics and Quality, 2015). High rates of EMPO use among young people have also been observed internationally (Brands, Paglia-Boak, Sproule, Leslie, & Adlaf, 2010; Ghandour, El Sayed, & Martins, 2012).

Increasing EMPO use has resulted in severe public health, social, and economic problems (Kolodny et al., 2015). The rate of EMPO-attributable fatal overdose has continued to climb over the past decade, and by 2011 was four times that observed in 1999 (Chen, Hedegaard, & Warner, 2014). Substantial increases in the number of emergency visits related to EMPO use have been observed, from 172,738 in 2004 to 488,004 in 2011 (Substance Abuse and Mental Health Services Administration, 2013). Between 2002 and 2012, there was a 370% increase in the rate of individuals seeking publicly funded treatment for addiction to prescription opioids (Substance Abuse and Mental Health Services Administration, 2014).

Evidence also suggests that growth in the sale, use, and non-medical use of prescription opioids have contributed to a dramatic rise in heroin use in the United States. Analyses of data from the National Survey of Drug Use and Health (NSDUH) suggests that the risk of heroin initiation is approximately 20 times higher among persons who report extra-medical use of prescription opioids, with four out of five recent heroin initiates reporting prior EMPO use (Muhuri, Gfroerer, & Davies, 2013). Young adult populations are

* Corresponding author. Tel.: +1 401 863 6427; fax: +1 401 863 3713.
E-mail address: brandon_marshall@brown.edu (Brandon D.L. Marshall).

http://dx.doi.org/10.1016/j.drugpo.2016.01.022
0955-3959/

among those at greatest risk of heroin initiation: a recently published report from the Centers for Disease Control and Prevention found that heroin use is most common among persons 18–25 years, and has doubled since 2002, from 3.5 per 1000 in 2002–2004 to 7.3 per 1000 in 2011–2013 (Jones, Logan, Gladden, & Bohm, 2015). In a recently published retrospective analysis of NSDUH data, the peak hazard of heroin initiation among young EMPO users was 18 years old (Cerdá, Santaella, Marshall, Kim, & Martins, 2015). Notably, those reporting EMPO use initiation at ages 10–12 had the highest risk of transitioning to heroin use in young adulthood, compared to youth who initiated EMPO use later in adolescence. A recent longitudinal study of EMPO-using youth in Ohio also found that initiating prescription opioid use before age 15 increased the risk for transition to heroin use (Carlson, Nahhas, Martins, & Daniulaityte, 2016). These studies extend former work demonstrating that early onset non-medical prescription drug use is a risk factor for the development of opioid dependence (McCabe, West, Morales, Cranford, & Boyd, 2007).

With regards to injection drug use, early studies indicated that prescription opioid injecting among young adults was rare. For example, a US study of over 4000 undergraduates found that injection drug use was reported by less than 0.5% of lifetime EMPO users (McCabe, Cranford, Boyd, & Teter, 2007). Another study of over 500 street-based EMPO users in New York City found that prescription opioid injection was reported by less than 5% (Davis & Johnson, 2008). More contemporary evidence suggests that injecting initiation is increasingly common in this population (Roy, Arruda, & Bourgois, 2011; Young, Havens, & Leukefeld, 2010). One study of rural Appalachian EMPO users found that the median time from first use of OxyContin® to injection was 3 years (Young & Havens, 2012). Although the majority of EMPO users do not transition to injection drug use, initiation rates are increasing, particularly among young people (Green, Black, Grimes Serrano, Budman, & Butler, 2011; Green, Bowman, Low, McHugh, & Friedmann, 2015). Qualitative research has identified several distinct typologies of substance use transitions among young EMPO users who progress to injecting. Many begin with snorting or sniffing prescription opioids, followed by non-injection heroin use and subsequent heroin injecting (Mars, Bourgois, Karandinos, Montero, & Ciccarone, 2014), or direct progression to prescription opioid injecting (Lankenau et al., 2012a; Roy et al., 2011).

There is significant concern that increasing rates of injecting among young people may offset declines in HIV incidence attributable to injection drug use observed in the US and other Western nations over the past decade (Hadland & Wood, 2012; Surratt, Kurtz, & Cicero, 2011). Moreover, the incidence of hepatitis C virus (HCV) among young persons in the US has risen dramatically since 2006, with the majority (77%) of new HCV cases reporting a history injection drug use, and 82% reporting sharing of other drug preparation equipment (Suryaprasad et al., 2014). One recent study involving young persons in Kentucky, Tennessee, Virginia, and West Virginia reported that 73% of acute HCV cases cited injection drug use as the principal risk factor (Zibbell et al., 2015). The study also found a concomitant increase in the percentage of admissions to publicly-funded substance abuse treatment centres for prescription opioid injection (from 6% to over 18%), further demonstrating a link between EMPO use, drug injecting, and HCV infection among young people. In another study of people who inject drugs (PWID), younger age and prescription opioid injection (compared to the injection of other drugs) were positively associated with HCV seropositivity (Zibbell, Hart-Malloy, Barry, Fan, & Flanigan, 2014). Prescription opioid injection was also identified as an independent risk factor for HCV acquisition in a street-based sample of drug users in Montréal (Bruneau, Roy, Arruda, Zang, & Jutras-Aswad, 2012). Collectively, these findings demonstrate that youth who inject prescription opioids represent a population in need of improved access to evidence-based harm reduction and HIV/HCV prevention services.

Historically, overdose fatalities have been most common among older adults (45–54); however, recent data suggests that mortality rates have been increasing among young people, at least 10% annually over the past decade (Hedegaard, Chen, & Warner, 2015). Similar trends have been observed in the rate of hospitalizations for prescription opioid overdose among young people (White, Hingson, Pan, & Yi, 2011). A growing literature has documented the contexts, experiences, and risk factors for overdose among EMPO-using young adults. For example, recent studies have revealed pervasive personal and/or social experiences with overdose, primarily in the context of multiple pharmaceutical use – prescription opioids with benzodiazepines and other prescription medications – or combined use of opioid analgesics and heroin (Frank et al., 2015; Lankenau et al., 2012b). Polysubstance use significantly increases the risk of overdose among EMPO users, particularly when opioids are combined with other central nervous system-depressant drugs that result in respiratory depression (Webster et al., 2011). However, studies to date have shown young EMPO users have poor knowledge of opioid overdose avoidance and response strategies, and perceive prescription opioids as associated with a lower risk of overdose than illicit drugs such as crack, methamphetamine, and heroin (Daniulaityte, Falck, & Carlson, 2012; Frank et al., 2015).

In sum, the collective body of evidence demonstrates substantial vulnerability to HCV infection, overdose, and other adverse health concerns among young people who use prescription opioids extra-medically. Although harm reduction approaches have a critical role to play in the prevention of morbidity and mortality among EMPO users, the uptake and effectiveness of evidence-based interventions (e.g., needle and syringe programmes, naloxone distribution) among opioid-using young adults has been limited (Frank et al., 2015; Mateu-Gelabert, Guarino, Jessell, & Teper, 2015). In this commentary, we summarize key harm reduction strategies for EMPO users, focusing on young adult populations. We discuss established and emerging interventions to reduce harms associated with EMPO use among young people, and examine structural, programmatic, and logistical barriers to their implementation. Finally, we highlight promising new avenues for research and practice to address EMPO use and mitigate related harms among youth.

Harm reduction for extra-medical prescription opioid users

A number of evidence-based harm reduction interventions are available for EMPO users (European Monitoring Centre for Drugs & Drug Addiction, 2015a; Wermeling, 2010). For people who inject prescription opioids, engagement in needle and syringe programmes (NSPs) reduces injection-related risk behaviour and can prevent HIV and HCV disease transmission (MacArthur et al., 2014). In addition to standalone NSPs, pharmacies are a common source of syringes for prescription opioid injectors (Zaller et al., 2012). Medication-assisted treatment (MAT) with opioid agonists (methadone and buprenorphine) and antagonists (short- or long-acting naltrexone) have been shown to be highly effective at diminishing opioid use (Mattick, Breen, Kimber, & Davoli, 2009), decreasing the risk of HIV infection (Gowing, Farrell, Bornemann, Sullivan, & Ali, 2011), improving adherence with HIV medications (Lappalainen et al., 2015), and reducing the risk of mortality (Cornish, Macleod, Strang, Vickerman, & Hickman, 2010). Unfortunately, these medications are highly underutilized in the United States: of the 2.5 million persons with opioid dependence in 2012, fewer than one million received MAT (Volkow, Frieden, Hyde, & Cha, 2014). Supervised injecting facilities (SIFs) represent an additional, evidence-based harm reduction strategy to engage