Reducing the Use & Misuse of Heroin

A Literature Review

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INTRODUCTION

Overdose deaths from heroin and prescription opioids are a major public health problem that has reached epidemic proportions in the United States in recent years. Since 1999 the number of overdose deaths involving opioids quadrupled (CDC, 2016). From 2000 to 2015 more than half a million people died from drug overdoses, with more than six out of ten involving an opioid (Rudd et al., 2016). Ninety-one Americans die every day from an opioid overdose (CDC, 2017). In Australia, overdose has become a leading cause of morbidity and mortality among heroin injectors (Roxburgh &, Degenhardt, 2008). To address these crises, numerous public health researchers have developed and studied various strategies for prevention, intervention, and treatment, offering analysis of the conditions of the problem as well as potentially successful approaches.

Kolodny et al. (2015) describe how current efforts to address the opioid crisis have mainly focused on reducing nonmedical opioid pain reliever (OPR) use. Too often overlooked, however, is how overprescribing of OPRs has led to an increased rate of opioid addiction and an associated rise in overdose deaths and heroin use. They argue that a multifaceted public health approach employing primary, secondary, and tertiary prevention strategies is essential to effectively decrease opioid-related morbidity and mortality. In a corresponding approach, Harris (2016) suggests that Screening, Brief Intervention, and Referral to Treatment (SBIRT) is a promising method for preventing adolescents' initiation into abusing less harmful substances, such as alcohol and marijuana, as well as reducing risky substance use before it progresses to the use of harder drugs such as heroin. He recommends adding SBIRT to the discussion and using it as an upstream prevention and intervention strategy to greatly decrease opioid abuse and save lives.
Investigating safe using methods among injecting drug users (IDUs), Miller (2009) found that most study participants displayed an indifference toward heroin-related death, and despite being aware of the possible consequences of their use, these risks were not seen as important as obtaining the desired state of mind. In this context, he advises that safe use messaging efforts must include attempts to reduce environmental risk factors such as poverty, marginalization, isolation, and psychological difficulties if they are to be effective. Sherman et al. (2002) similarly found that users' social environments were a major factor in their transition to injection drug use. Therefore, combating this transition should involve addressing users' social spheres of influence through efforts such as: prevention programs for non-injecting drug users to dispel myths about the cost effectiveness of injection; interventions targeting IDUs with their non-injecting sex partners; family-based treatment centers; and harnessing social networks in interventions targeting IDUs and heroin sniffers.

Horyniak et al. (2010) evaluated the success of an Australian heroin overdose and prevention campaign, concluding that it should have considered design and implementation before the campaign, supplemented survey data with other forms of data collection, and avoided delays between issue identification and the rollout of campaign materials. Future initiatives should be designed and implemented quickly through methods sufficiently flexible to address changes in drug markets that may hinder the effectiveness of key messages.

ARTICLE 1: THE PRESCRIPTION OPIOID AND HEROIN CRISIS: A PUBLIC HEALTH APPROACH TO AN EPIDEMIC OF ADDICTION

SUMMARY

According to the United States Centers for Disease Control and Prevention, recent dramatic and unprecedented increases in the rate of opioid pain reliever (OPR) use have induced the worst drug overdose epidemic in US history. From 1999 to 2011 consumption of hydrocodone and oxycodone more than doubled, and the death rate from OPR-related overdose almost quadrupled. Furthermore, the federal government's National Survey on Drug Use and Health found that 80 percent of current heroin users reported that their opioid use started with OPRs, and the increased extent of opioid addiction has

been linked to rises in the incidence of heroin usage and heroin-related overdose. While this current crisis is not without precursors in US history, recent development and overprescribing of OPRs have fueled a rapid acceleration in opioid addiction. **This sharp rise in the prevalence of addiction is a key catalyst of opioid-related morbidity and mortality, and efforts to address this crisis must include preventing and treating opioid addiction rather than focusing exclusively on reducing nonmedical OPR use** (p. 560-565).

Combating the epidemic of opioid addiction should include interventions focused on three areas of prevention. **Primary prevention through more cautious prescribing** can reduce the incidence of new cases of medical and nonmedical exposure to OPRs. **Secondary prevention** to identify nascent cases of opioid addiction should involve prescribers detecting early addiction and **prescriptions from multiple providers ("doctor shopping")** through consulting collateral information such as reports from prescription drug monitoring programs before prescribing OPRs. Lastly, **tertiary prevention** measures that ensure access to effective treatment can be accomplished through pharmacotherapies such as **methadone and naltrexone**, **psychosocial methods** including residential treatment and mutual-help programs, and **harm-reduction approaches** such as syringe exchange programs and expanding access to naloxone. This multi-pronged framework for intervention is essential to effectively decrease opioid-related morbidity and mortality (p. 565-569).

The overprescribing of OPRs has led to an increased rate of opioid addiction and a concurrent rise in overdose deaths, with elderly and middle-aged individuals frequently introduced to OPRs for analgesic purposes experiencing the largest increase in incidence of opioid-related morbidity and mortality. **Acknowledging that opioid addiction in both medical and nonmedical users is a central driver of opium-related morbidity and mortality, rather than focusing solely on decreasing nonmedical OPR use, will more effectively address this crisis**. A multi-faceted approach utilizing primary, secondary, and tertiary prevention strategies is necessary to counter the recent epidemic of opioid addiction. Addressing this disease affecting the lives of millions of Americans requires more selective OPR prescribing while ensuring access to addiction treatment (p. 559, 560, 569).

ARTICLE 2: SOCIAL INFLUENCES ON THE TRANSITION TO INJECTION DRUG USE AMONG YOUNG HEROIN SNIFFERS: A QUALITATIVE ANALYSIS

SUMMARY

Although studies have examined the prevention of initiating injection drug use and the period following initiation, little research has directly focused on the factors affecting transition to injection drug use among young heroin sniffers before they begin injection drug use, and few studies investigate the role of social environment on transition behaviors. This qualitative study employed nineteen in-depth interviews with young injection drug users who had begun injecting within three years prior to "explore the spheres that influence young drug users' transition from heroin sniffing to injecting in Baltimore, MD" (p. 114). **Results from the study reveal a range of social loci where drug use was considered normative behavior, and an increased role of drugs in young users' lives** preceding their initiation of drug injection, making injection use easily adopted by study participants (p. 113, 114, 118).

Social Influence Theory provides an advantageous framework for examining the factors associated with transition to injection drug use and understanding how a user's social environment and social network establish social norms that directly and indirectly affects individuals' behavior choices. **Spheres of influence that emerged from the study included family, sex partners, friends, and neighborhood physical environments, as well as the expense of sniffing and the level of addiction and usage maintenance at the individual level.** When asked about their first time injecting heroin, 44 percent of participants reported injecting with a friend, 34 percent reported injecting with a sex partner, 17 percent reported injecting with a family member, and 5 percent reported injecting alone. Qualitative data found a pervasive initiation of injection among women by their male sexual partners, consistent instability and introduction to drugs among participants' families when growing up that appeared to contribute to drug use, shifting of social circles to accommodate participants' level of addiction and drug of choice, and participants having interacted with a large number of IDUs by the

time they began injecting. As one participant noted, “Everybody else around me was doing it. I just wanted to feel what it was like; then I ended up liking it” (p. 115-118).

Study results indicate initiation of drug injection followed a growing role of drugs in the lives of young users in which they were most often introduced to injection by a friend, sex partner, or relative. Addressing this phenomenon should involve engaging these arenas of influence through efforts such as: prevention programs for non-injecting drug users to dispel myths about the cost effectiveness of injection; family-based treatment centers which could help break the intergenerational cycle of abuse; interventions targeting IDUs with their non-injecting sex partners; and utilizing social networks in interventions targeting IDUs and heroin sniffers. Injection drug use is a socially moderated and learned behavior associated with social relationships. Therefore, **research and intervention efforts should conceptualize, contextualize, and focus on injection drug use through its social dynamics to better address the confluence of factors that initiate injection and perpetuate heroin usage** (p. 118-119).

ARTICLE 3: SAFE USING MESSAGES MAY NOT BE ENOUGH TO PROMOTE BEHAVIOR CHANGE AMONGST INJECTING DRUG USERS WHO ARE AMBIVALENT OR INDIFFERENT TOWARD DEATH

SUMMARY

Health education and promotion strategies aimed at preventing overdose and blood-borne viruses in IDUs have had some success, with the majority of these intervention approaches revolving around safe use messaging such as 'don't reuse needles', 'split the dose', and 'watch your tolerance'. However, attitudes toward death, the perceived consequences of individual use, and human desires and preferences impact the efficiency, efficacy, and relevance of such approaches when health behavior is prioritized lower than other considerations. **Interviews with sixty heroin users in the city of Geelong, Australia found that indifference toward heroin-related death presented significant complications to the success of safe use messaging.**

When asked whether they ever talked about death with their peers, how they felt about death, and whether they were afraid of dying, 84 percent of interviewees stated that they never talked about death, 82 percent reported that they were never afraid of dying, and half showed either indifference or fatalism about death. **Narrative responses of indifference to life, death, and risk included a perception of overdose death as a comparatively pleasant experience, the influence of social or societal factors such as poverty and urban deprivation, discrimination, the role of dependency, and the belief that death was an inherent hazard of heroin use.** While thirteen interviewees reported that they considered death to be the worst consequence of an overdose, over two-thirds identified brain damage, being woken up, police involvement, or other consequences as worse. This research suggests that many interviewees did not see the possibility of death as a reason to reduce risky behaviors, most experienced the consequences of risky behavior regularly, and most tended to repress their fear of death, treating its likelihood with either ambivalence or indifference.

Interviewees predominantly displayed an indifference, dispassion, and fatalism toward their own heroin-related death—often driven by ambivalence and confused motives—against a backdrop of social and environmental factors such as poverty, marginalization, isolation, deprivation, and psychological difficulties. Narratives suggesting a low prioritization of health, a perceived lack of agency, little meaning in life apart from drug use, being dislodged from the larger social fabric of society, and death as an occupational hazard indicate the view among many IDUs that taking measures to avoid death is undesirable and pointless. While most interviewees were aware of the possible consequences of their substance abuse, this was not considered as important as the desired state of mind, leading to a sense of indifference or resignation toward death. In this context, safe use messages of harm reduction and health promotion may hold little promise and have minimal effect or relevance. **It may be more useful to address the reasons surrounding this indifference, such as environmental risk factors, rather than attempt to change behavior or apply discourses of choice that may ultimately fail to serve the drug user and the wider community**.

ARTICLE 4: TALKING ABOUT SCREENING, BRIEF INTERVENTION, AND REFERRAL TO TREATMENT FOR ADOLESCENTS: AN UPSTREAM INTERVENTION TO ADDRESS THE HEROIN AND PRESCRIPTION OPIOID EPIDEMIC

SUMMARY

Deaths from drug overdose have reached epidemic levels in the United States. Deaths involving heroin have tripled since 2010, making opioid use a major contributor to the rise in overall drug overdoses in recent years. Along with death by suicide, this sharp rise in overdose deaths drove an increase in the United States mortality rate in 2015—the first increase in ten years. With the epidemic impacting the nation across gender, race, age, and region, it has recently gained the attention of the media, filmmakers, and lawmakers at the federal, state, and local level. This attention has spurred initiatives to tackle the crisis. In 2015, the **Department of Health and Human Services dedicated $133 million to providing training and educational resources** to assist health professionals. In 2016, the CDC released new guidelines for primary care physicians on how to responsibly prescribe painkillers, and the FDA has begun targeting consumers by issuing warnings of abuse, misuse, addiction, and death on the packaging of opioid pain medication. Policymakers have also responded, such as through the 2016 Comprehensive Addiction and Recovery Act which focuses on community prevention, overdose response, treatment, and enforcement and supply reduction.

But though this epidemic has sparked a necessary conversation in recent years, **from a public health perspective, subsequent discussion, proposals, and actions are not enough.** Current responses are focused on preventing overdose deaths among opioid users. However, the majority of addictions start with alcohol and marijuana use in adolescents. Ninety percent of people addicted to alcohol or other drugs started using before the age of 18, and young adults who use alcohol and marijuana are two to three times more likely to abuse prescription opioids later in life. Studies indicate that approximately 2.9 million adolescents drink, 1.5 million engage in binge drinking, 257,000 drink heavily, and 1.8 million use marijuana.

Due to this, the discussion about tackling this epidemic must also include upstream efforts to prevent drug and alcohol use and abuse before it progresses to the use of harder drugs such as heroin. An upstream method of intervention which may be used to prevent heroin and prescription opioid death is Screening, Brief Intervention, and Referral to Treatment (SBIRT). **SBIRT identifies individuals across a range of substance use by integrating universal screening** using a standardized instrument into clinical protocol. The emerging research has found that SBIRT for adolescents reduces alcohol and marijuana use, decreases the intention to use, and reduces initiation. However, fewer than half of pediatric providers screen their adolescent patients for substance abuse, use standardized instruments, or provide intervention. To address this, current momentum in the fight against the opioid epidemic should be utilized to raise awareness of SBIRT as an upstream preventative intervention among policymakers, administrators, and clinicians. Work has been done to add SBIRT to the political conversation, but to have results on a larger scale, the discussion and dissemination of information about SBIRT must emphasize its ability to prevent adolescent users of drugs and alcohol from progressing to heroin and prescription opioid abuse. **A multi-faceted approach, with SBIRT serving as an upstream prevention strategy, can greatly decrease abuse and save lives.**

ARTICLE 5: AN EVALUATION OF A HEROIN OVERDOSE PREVENTION AND EDUCATION PROGRAM

SUMMARY

While IDUs appear to be well-informed of the risk factors, heroin overdose remains a leading cause of morbidity and mortality among Australian IDUs. Detection of an upward trend in the frequency of fatal overdoses in Victoria between 2001 and 2003 prompted a campaign aimed at decreasing the number of overdoses through raising awareness of risk behaviors and prevention and risk-reduction strategies. Wallet cards, stickers, posters, and other materials featuring five

key messages intended to increase awareness of risk factors and appropriate methods for response were distributed via needle and syringe programs (NSP) and other services between November 2005 and April 2006. A subsequent evaluation of the campaign sought to gauge the effectiveness of these efforts toward the goal of reducing the number of overdoses in Victoria.

In early 2004 **consultations with key stakeholders led to the development of five core campaign messages designed to: remind IDU of tolerance decreases after little or no use, encourage IDU to let others know when they will be using, make IDU aware of the risks of mixing opiates with other drugs, suggest that IDU discuss the quality and purity of the drug with their dealer, and encourage IDU to access treatment services.** Four messages were each implemented over consecutive two-week periods, with the treatment-related message implemented for only one week at the end. For two weeks after their introductions, the only messages which had significantly greater odds of being mentioned by NSP clients compared with baseline were 'low tolerance' as a risk factor and the risk-reduction strategies 'having half when tolerance is low'. Twelve months post campaign, most IDU interviewed could recall key campaign messages, however many reported that they were already familiar with them. **The message regarding polydrug use was considered the most pertinent**, yet other messages such as 'halve your hit' and 'phone a friend' were considered unrealistic and impractical. Data indicate knowledge of messages relating to tolerance and unknown purity increased over the campaign period, however key informants found the message 'using alone?' ambiguous, and drug treatment messages to be the least useful. Ultimately, survey data found only three messages showed a significant increase in response proportions, with seven messages showing no significant change, and four mentioned by fewer respondents than at baseline.

Despite overall positive responses to the campaign's message and presentation, **NSP client data showed that less than one quarter of all campaign messages were mentioned in the post-campaign period compared with baseline.** A major limitation involved a significant data-collection burden on NSP staff, limiting the ability to evaluate the campaign. For future campaign evaluations, design and implementation should be considered before the campaign, supplementing NSP survey data with other forms of data collection. Additionally, a delay between issue identification and the rollout of campaign materials made the messages less relevant when heroin quality decreased. Future initiatives should be designed and implemented quickly and in ways adequately flexible to address changes in drug markets that may affect the reception of key messages.

CONCLUSION

This literature review aimed to provide a state of the field regarding the prevention of use and misuse of heroin. This review examined a number of different approaches to this critical prevention issue, from interventions such as SBIRT that can occur within a proscribed medical setting, to research that looked at the complex contextual factors of heroin use, including social networks (e.g., friends, family, and the physical environment) and the effectiveness of media campaigns to reduce heroin use.

The five articles in this literature review responded to the growing public health epidemic of opioid use (e.g., heroin and prescription opioids). In the past fifteen years (i.e., from 2000-2015), half a million people have died of drug overdoses, with 60 percent of those involving opioids. In 2015, the number of Americans dying from drug overdoses surpassed those dying in car crashes—52,000 for the former (with over 17,000 deaths involving heroin and 13,000 involving opioids), and 38,000 for the latter. To combat this epidemic, those in public health must continue to conduct basic and applied research, and to develop, implement, and evaluate strategies for prevention, intervention, and treatment.

These strategies may include:

- **More cautious prescribing** of prescription opioids, developing strategies to **combat "doctor shopping"** and providing **effective, treatment options** (e.g., including methadone and naltrexone, psychosocial methods including residential treatment and mutual-help programs, and harm-reduction approaches such as syringe exchange programs and expanding access to naloxone) to those who need it (Kolodny et al, 2015).
- Prevention programs for non-injecting drug users to **dispel myths about the cost effectiveness of injection**; family-based treatment centers which could help break the intergenerational cycle of abuse; interventions targeting IDUs with their non-injecting sex partners; and utilizing social networks in interventions targeting IDUs and heroin sniffers (Sherman et al, 2002).

- **Addressing the reasons for heroin users' indifference to death from overdose (**rather than attempting to change entrenched behavior) by focusing on combatting environmental risk factors, such as poverty, marginalization, isolation, deprivation, and psychological difficulties. (Miller, 2009).
- **Integrate universal screening tools (e.g., SBIRT) into clinical settings**, as fewer than half of pediatric providers screen patients for substance use, even though evidence is clear that 90 percent of those using or misusing substances began when they were under age 18. (Harris, 2016).
- **Use effective research design to evaluate the effectiveness of media campaign** to reduce heroin overdoses (i.e., aimed at targeting injecting drug users). Even though IDUs could remember key campaign messages, they did not always find them relevant or pertinent (Horyniak et al, 2010).

AUTHOR INFORMATION

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