

UCSF

UC San Francisco Previously Published Works

Title

OPIOID ANALGESIC MISUSE IN A COMMUNITY-BASED COHORT OF HIV-INFECTED INDIGENT ADULTS

Permalink

<https://escholarship.org/uc/item/2801c3kj>

Authors

Vijayaraghavan, Maya
Penko, Joanne
Guzman, David
[et al.](#)

Publication Date

2012

Peer reviewed

RESEARCH LETTERS

**Opioid Analgesic Misuse
in a Community-Based Cohort
of HIV-Infected Indigent Adults**

Opioid analgesic misuse has risen in conjunction with increased rates of opioid prescribing. The association may be due to increased misuse among individuals receiving prescribed opioids or among those acquiring diverted opioids.¹ Individuals with pain and co-occurring mental health or substance use disorders are at an increased risk for misuse.^{2,3} Despite guidelines recommending caution,⁴ health care providers prescribe opioids to individuals with these disorders at higher rates than they do to individuals without them.⁵ Few studies have examined misuse among high-risk, community-based populations. We conducted a longitudinal study of a community-sampled cohort of human immunodeficiency (HIV)-infected indigent adults, selected without regard to pain status or receipt of prescribed opioids, to examine rates of and factors associated with opioid analgesic misuse.

*For editorial comment
see page 178*

Methods. We recruited participants from the Research on Access to Care in the Homeless (REACH) study, a longitudinal cohort of indigent HIV-infected adults in San Francisco recruited via community-based probability sampling.⁶ We interviewed participants at a community-based field site quarterly for 2 years about pain, treatment for pain, alcohol use, current smoking, illicit substance use, and depression. We described methods and study variables previously.^{7,8} At each interview, participants self-reported opioid analgesic misuse behaviors using audio computer assisted self-interviewing (ACASI) technology. We asked participants to report whether their motivation for misuse was to “treat pain,” “get high,” both, or neither. We defined major opioid analgesic misuse as behaviors that posed imminent risk for overdose or legal peril, or behaviors for which more than 50% of the participants reported their motivation for the behavior was to get high (**Table**). We reported past 90-day rates of misuse at the enrollment interview and cumulative rates over the study interval. Using mixed-effects multivariate logistic regression, we determined factors associated with major misuse.

Results. Among the 296 participants, 71.9% were male, 41.2% were African American, and 81.2% had a lifetime history of chronic homelessness. At enrollment, 10.1% reported current homelessness, 7.1% reported regular drinking, 74.3% reported current smoking, 34.8% reported current illicit substance use, and 27.4% had moderate to severe depression. At enrollment, 89.9% reported pain in the past week, and 52.0% reported being prescribed opioids by a health care provider in the past 90 days.

Over the study interval, 71.9% reported any misuse, and 53.4% reported major misuse (**Table**). For many misuse behaviors, most reported that their motivation was to get high; these behaviors included performing sex to get an opioid (80.0%), drinking alcohol or using street drugs to boost the effect of opioids (61.3%), or lying to a health care provider about pain symptoms in order to receive a prescription for opioids (51.1%) (**eTable**, <http://www.jamainternalmed.com>).

In multivariate analysis, current homelessness (adjusted odds ratio [AOR], 1.8 [95% CI, 1.1-3.1]), regular drinking (AOR, 1.8 [95% CI, 1.0-3.1]), current smoking (AOR, 1.8 [95% CI, 1.1-2.8]), current illicit substance use (AOR, 2.3 [95% CI, 1.6-3.4]), moderate to severe depression (AOR, 1.6 [95% CI, 1.1-2.4]), and being prescribed an opioid by a health care provider (AOR, 1.5 [95% CI, 1.1-2.2]) were associated with major misuse.

Comment. In this community-based cohort of HIV-infected indigent adults, participants reported high rates of opioid analgesic misuse both among those receiving prescription opioids from health care providers and among those who obtained opioids nonmedically. Despite high rates of known risk factors for opioid misuse (concurrent illicit substance use and depression), half the participants were prescribed opioids. Receipt of a prescribed opioid was independently associated with major misuse. These findings suggest that health care providers may not be optimally assessing and monitoring misuse risk. Consistent with previous studies,^{2,3} we identified modifiable risk factors for misuse, such as illicit substance use and depression. Our identification of current homelessness as a risk factor for misuse was novel; it is possible that the social disorganization associated with homelessness facilitates misuse or misuse behaviors pose barriers to housing.

Several factors could have influenced health care providers' decisions to prescribe opioids to high-risk individuals, including patients' severity of pain,⁸ limited access to pain specialists,⁸ and health care providers' limited ability to accurately assess for misuse.⁹ Our results suggest a need for strategies to assist health care providers with managing chronic pain in high-risk populations without increasing risk for misuse.

Table. Ninety-Day Rates at Enrollment and Cumulative Rates (Over the 2-Year Study Interval) of Opioid Analgesic Misuse in 296 Participants

Misuse Behavior	No. (%)	
	Past 90-d Rate	Cumulative Rate ^a
Major misuse ^b		
Used prescription opioid analgesics to get high ^c	32 (10.8)	75 (25.3)
Drank alcohol or used street drugs to boost effects of opioid analgesics ^d	41 (13.9)	95 (32.1)
Bought medicines from another person ^d	26 (8.9)	43 (14.5)
Sold opioid analgesics ^c	15 (5.1)	30 (10.1)
Snorted, crushed, injected, or smoked opioid analgesics ^c	10 (3.4)	28 (9.5)
Lied to a health care provider about pain symptoms to get a prescription for opioids ^d	6 (2.0)	19 (6.4)
Traded street drugs to get opioid analgesics ^c	10 (3.4)	26 (8.8)
Exchanged opioid analgesics for sex or other drugs ^c	4 (1.4)	14 (4.7)
Stole opioid analgesics from another person ^c	9 (3.0)	26 (8.9)
Licked, dissolved, or injected transdermal fentanyl ^c	5 (1.7)	21 (7.1)
Performed sex to get one of these medicines ^c	2 (0.7)	14 (4.7)
Attempted to forge a prescription for opioid analgesics ^c	1 (0.3)	16 (5.4)
Stole opioid analgesics from a pharmacy, hospital, or clinic ^c	1 (0.3)	12 (4.1)
Any major misuse	72 (24.3)	158 (53.4)
Minor or pseudoaddictive behaviors		
Saved prescription opioid analgesics when done using	38 (12.8)	101 (34.1)
Borrowed opioid analgesics from another person	24 (8.1)	58 (19.6)
Falsely reported that prescription was lost, ruined, or stolen	12 (4.1)	36 (12.2)
Had an argument with a health care provider about opioid analgesics	5 (1.7)	28 (9.5)
Lied to a health care provider about side effects or allergies to get a specific prescription opioid	2 (0.7)	23 (7.8)
Been told to leave a health care clinic, hospital, or emergency department or been banned from one of these places because of behavior related to an opioid	0	12 (4.1)
Ever tried to obtain an opioid analgesic over the Internet without a prescription	0	7 (2.4)
Any of the above misuse behaviors	105 (35.5)	213 (71.9)

^aCumulative rate over the 2-year study interval.

^bDefined as any behavior that increases risk for overdose or legal consequences or behaviors for which more than 50% of the participants reported that the motivation for misuse was to get high.

^cBehaviors that pose risk for overdose or legal consequences.

^dBehaviors that were initially considered to be "minor" that we reclassified as major because more than 50% of the participants reported that the motivation for misuse was to get high.

To our knowledge, no prior study has examined self-reported motivations for misuse. Previous studies characterized behaviors such as lying about pain symptoms to health care providers to get opioids or buying opioids from another person as behaviors related to poorly controlled pain or "pseudoaddiction."⁷ Our findings suggest a need for assessing the motivations for misuse rather than assuming that certain behaviors are pseudoaddictive. Our study had several limitations, including relying on self-reports of misuse. We used ACASI technology, which has been shown to minimize underreporting of stigmatized behaviors.

Our results suggest that health care providers need to be selective about using these medications among high-risk patients, assess for misuse prior to initiating treatment, and monitor for misuse during treatment of chronic pain.

Maya Vijayaraghavan, MD, MAS
Joanne Penko, MS, MPH
David R. Bangsberg, MD, MPH
Christine Miaskowski, RN, PhD
Margot B. Kushel, MD

Published Online: January 14, 2013. doi:10.1001/jamainternmed.2013.1576

Author Affiliations: Moores Cancer Center, University of California, San Diego (Dr Vijayaraghavan); Division

of General Internal Medicine, San Francisco General Hospital, San Francisco, California (Ms Penko and Dr Kushel); Departments of Medicine (Ms Penko and Dr Kushel) and Physiological Nursing (Dr Miaskowski), University of California, San Francisco; Department of Medicine, Division of Infectious Disease, Massachusetts General Hospital Center for Global Health, Boston (Dr Bangsberg); Ragon Institute of Massachusetts General Hospital, Massachusetts Institute of Technology, and Harvard Medical School, Charlestown (Dr Bangsberg); Department of Global Health and Social Medicine, Harvard Medical School (Dr Bangsberg); and Department of Global Health and Population, Harvard School of Public Health, Boston (Dr Bangsberg).

Correspondence: Dr Kushel, Division of General Internal Medicine, University of California, San Francisco, San Francisco General Hospital, PO Box 1364, San Francisco, CA 94143 (margot.kushel@ucsf.edu).

Author Contributions: All authors had full access to all the data in the study and take full responsibility for the integrity of the data and the accuracy of the data analysis. *Study concept and design:* Vijayaraghavan, Penko, Bangsberg, Miaskowski, and Kushel. *Acquisition of data:* Penko, Bangsberg, and Kushel. *Analysis and interpretation of data:* Vijayaraghavan, Bangsberg, Miaskowski, and Kushel. *Drafting of the manuscript:* Vijayaraghavan, Miaskowski, and Kushel. *Critical revision of the manu-*

script for important intellectual content: Penko, Miaskowski, and Kushel. *Statistical analysis*: Vijayaraghavan. *Obtained funding*: Bangsberg, Miaskowski, and Kushel. *Administrative, technical, and material support*: Penko, Bangsberg, Miaskowski, and Kushel. *Study supervision*: Bangsberg and Kushel.

Conflict of Interest Disclosures: None reported.

Funding/Support: This study was funded by a grant from the National Institute of Drug Abuse R01DA022550, and a grant from the National Institute of Mental Health R01MH54907. The Tenderloin Center for Clinical Research was supported by the University of California, San Francisco (UCSF), Clinical and Translational Institute grant, NIH/NCRRC UCSF-CTSI ULI RR024131. Dr Vijayaraghavan is supported by a postdoctoral fellowship from the Cancer Prevention and Control Division, Moores Cancer Center, University of California, San Diego.

Role of the Sponsor: The funders had no role in the design and conduct of the study; in the collection, analysis, and interpretation of the data; or in the preparation, review, or approval of the manuscript.

Previous Presentation: Results from this study were presented in an oral presentation at the Annual Meeting of the Society of General Internal Medicine; May 12, 2012; Orlando, Florida.

Additional Contributions: We thank the research assistants for conducting the patient interviews; the participants for their contribution to this study; and Eric Vittinghoff, PhD, and David Guzman, MSPH, for their contributions toward the statistical analysis and interpretation of data, and for their comments on an earlier draft of the manuscript.

Online-Only Material: The eTable is available at <http://www.jamainternalmed.com>.

1. Becker WC, Tobin DG, Fiellin DA. Nonmedical use of opioid analgesics obtained directly from physicians: prevalence and correlates. *Arch Intern Med*. 2011;171(11):1034-1036.
2. Ives TJ, Chelminski PR, Hammett-Stabler CA, et al. Predictors of opioid misuse in patients with chronic pain: a prospective cohort study. *BMC Health Serv Res*. 2006;6:46.
3. Turk DC, Swanson KS, Gatchel RJ. Predicting opioid misuse by chronic pain patients: a systematic review and literature synthesis. *Clin J Pain*. 2008;24(6):497-508.
4. Chou R, Fanciullo GJ, Fine PG, et al; American Pain Society-American Academy of Pain Medicine Opioids Guidelines Panel. Clinical guidelines for the use of chronic opioid therapy in chronic noncancer pain. *J Pain*. 2009;10(2):113-130.
5. Edlund MJ, Martin BC, Devries A, Fan MY, Braden JB, Sullivan MD. Trends in use of opioids for chronic noncancer pain among individuals with mental health and substance use disorders: the TROUP study. *Clin J Pain*. 2010;26(1):1-8.
6. Robertson MJ, Clark RA, Charlebois ED, et al. HIV seroprevalence among homeless and marginally housed adults in San Francisco. *Am J Public Health*. 2004;94(7):1207-1217.
7. Hansen L, Penko J, Guzman D, Bangsberg DR, Miaskowski C, Kushel MB. Aberrant behaviors with prescription opioids and problem drug use history in a community-based cohort of HIV-infected individuals. *J Pain Symptom Manage*. 2011;42(6):893-902.
8. Miaskowski C, Penko JM, Guzman D, Mattson JE, Bangsberg DR, Kushel MB. Occurrence and characteristics of chronic pain in a community-based cohort of indigent adults living with HIV infection. *J Pain*. 2011;12(9):1004-1016.
9. Vijayaraghavan M, Penko J, Guzman D, Miaskowski C, Kushel MB. Primary care providers' judgments of opioid analgesic misuse in a community-based cohort of HIV-infected indigent adults. *J Gen Intern Med*. 2011;26(4):412-418.

Physician Acquiescence to Patient Demands for Brand-Name Drugs: Results of a National Survey of Physicians

Prescribing brand-name drugs when generic drugs are available generates unnecessary medical expenditures, the costs of which are borne by the public in the form of higher copayments, increased health insurance costs, and higher Medicare and Medicaid expenses.^{1,2} Pharmaceutical companies aim to stimulate patients' requests for brand-name medications and increase the likelihood physicians will honor such requests.^{3,4} Presently, little is known about how frequently physicians comply with such a request or the factors predicting this behavior.

Methods. The data come from a national survey of 3500 randomly sampled physicians in 7 specialties. Additional information on the sampling, survey administration, and analyses for this study are described at length in several other published articles.⁵⁻⁷ Of the 3500 physicians in the original sample, 2938 were eligible for the survey (others were ineligible because they were on leave, not actively practicing, practicing in a nonsampled specialty, out of the country, or deceased). Of the remaining eligible physicians, 1891 participated in the survey, representing a 64% overall response rate.

See also pages 179 and 229
and Editor's Note at end of article

Results. The results of the multivariable analyses of prescribing behavior as a function of physician characteristics are given in the **Table**. The multivariable regression shows that 43% of physicians in practice more than 30 years sometimes or often give in to patients' demands for brand-name drugs compared with 31% physicians in practice for 10 years or less ($P = .001$). Among the various specialties, pediatricians, anesthesiologists, cardiologists, and general surgeons were significantly less likely to acquiesce to patient demands relative to internal medicine physicians ($P < .001$). Physicians working primarily in solo or 2-person practices were significantly more likely to acquiesce to patient demands than those working in a hospital or medical school setting (46% vs 35%; $P = .04$).

Two specific forms of industry relationships were associated with significant differences in the percentage of physicians who acquiesced to patient demands. More than a third who received free food and/or beverages in the workplace honored patient requests sometimes or often compared with those who had not received food and beverages (39% vs 33%; $P = .003$). Similar significant differences were found among those receiving drug samples (40% vs 31%; $P = .005$). Also, physicians who sometimes or often met with industry representatives to stay up to date were significantly more likely to comply with patients' demands than those who did not (40% vs 34%; $P = .007$).