

Motives for Medical Misuse of Prescription Opioids Among Adolescents

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Abstract: This study examined the motives for medical misuse of prescription opioids among adolescents and assessed differences in motives by demographic characteristics, substance abuse, and diversion behaviors. A survey was conducted in 2011 to 2012 and the sample consisted of 2,964 adolescents (51% female). Thirteen percent reported past-year medical use of prescription opioids. Among those prescribed opioids in the past year ($n = 393$), 17.9% reported medical misuse (eg, using too much, using to get high, or using to increase alcohol or other drug effects). The most prevalent motives for medical misuse were “to relieve pain” (84.2%) and “to get high” (35.1%). Multivariate analyses indicated that the motives differed by race, and that different motives were associated with different substance abuse and diversion behaviors. The odds of past-year substance abuse among medical misusers motivated by non-pain relief were more than 15 times greater than for nonusers (adjusted odds ratio = 15.2, 95% CI = 6.4–36.2, $P < .001$). No such differences existed between nonusers and appropriate medical users, or between nonusers and medical misusers motivated by pain relief only. These findings improve our understanding of opioid medication misuse among adolescents and indicate the need for enhanced education about appropriate medical use, pain management, and patient communication with prescribers.

Perspective: This article represents the first investigation to examine the motives associated with medical misuse of prescription opioids among adolescents. The results indicate that the majority of medical misuse is associated with pain relief. This information could be used to develop strategies to reduce opioid medication misuse among adolescents.

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Key words: Prescription, opioid, medication, medical use, medical misuse, nonmedical use, pain, motivations, adolescents, substance abuse, diversion, epidemiology.

Although recent increases in the medical and nonmedical use of prescription opioids among adolescents and young adults have garnered a

great deal of attention in the United States, there has been much less attention given to the medical misuse of prescription opioids.^{3,17,27,30,36,41} For the purposes of this investigation, *medical misuse* of prescription opioids is defined as the use of prescribed opioids by a patient with a prescription for an opioid analgesic who uses the prescription in a manner not intended by the prescriber (eg, higher or more frequent doses, using intentionally to get high, or coingesting with alcohol or other drugs). For the purposes of this investigation, *nonmedical use* of prescription opioids is defined as the use of someone else's prescription opioids. Surprisingly, the largest national epidemiological studies conducted in the United States fail to distinguish individuals who engage in medical misuse of prescription opioids from those who engage in nonmedical use of prescription opioids. Thus,

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these individuals are often combined in national estimates for studies such as the Monitoring the Future Study, the National Comorbidity Study, the National Epidemiologic Survey on Alcohol and Related Conditions, and the National Survey on Drug Use and Health. As a result, considerable gaps in knowledge remain because of limitations in measures and study designs.^{5,9,10,15,47}

Although the majority of adolescents who are prescribed opioids use them appropriately, at least 1 study found that approximately 20% of adolescents prescribed opioids in the past year reported medical misuse.³³ Moreover, although several past studies have examined the motives associated with nonmedical use of prescription opioids among adolescents and young adults,^{6,24,26,28} the motives associated with medical misuse have not been investigated to date. Several commentaries have encouraged an improved understanding of the motives associated with medical misuse and nonmedical use of prescription opioids.^{5,9,10,47}

Motives for nonmedical use of prescription opioids have been examined among college students,²⁸ Detroit area secondary school districts,⁶ and high school seniors nationally.^{24,26} Pain relief was the leading motive for nonmedical use of prescription opioids in college students (63%) and in the Detroit area sample (79%) and was one of the leading motives among high school seniors nationally.^{6,26,28} Across these studies, other common motives included to get high, to experiment, to relax or relieve tension, and to help sleep. In general, those who reported nonmedical use *only* to relieve pain did not differ from those who did not report nonmedical use with regard to other substance use and abuse. By contrast, the odds of other substance use and abuse were considerably higher among those who reported nonmedical use for non-pain relief motives compared to those who did not report nonmedical use. Although previous studies have shown that a history of substance abuse is associated with increased opioid medication misuse in patients treated for chronic pain,^{37,39} no studies have examined the motives for medical misuse of prescription opioids in the general population and whether such motives are associated with demographic characteristics, substance abuse, and diversion behaviors. Therefore, the main objectives of this study were to 1) determine the past-year prevalence of motives for medical misuse of prescription opioids among adolescents in 2 school districts in the metropolitan Detroit, Michigan, area and 2) assess the associations of motives for medical misuse with gender, race/ethnicity, substance abuse, and diversion behaviors.

Methods

This study was conducted during a 5-month period from December 2011 to April 2012, drawing on the entire population of middle and high school students in 2 public school districts in the Detroit metropolitan area (7th–12th grades). The study received approval from the University of Michigan Institutional Review Board, and a Certificate of Confidentiality was obtained from the National Institutes of Health. All parents in the

school district were sent letters requesting permission for their children to participate in the Secondary Student Life Survey, explaining that participation was voluntary, describing the relevance of the study, and assuring that all responses would be kept confidential. All participants were informed that a private research firm, unaffiliated with the school district, was contracted to set up the web survey as well as store and maintain data to ensure that responses were kept confidential. Informed consent was obtained from each parent and assent was obtained from each respondent.

The web survey was maintained on a hosted secure Internet site running under the secure sockets layer protocol to ensure that the survey data were safely transmitted between the respondents' browsers and the server. The survey took approximately 40 minutes to complete and administration was supervised by staff from the University of Michigan and a private research firm. The final response rate for this web survey was 71%, based on guideline 2 (ie, RR2) of the American Association for Public Opinion Research. The final response rate mirrors the overall response rate (71%) from a 2011 national school-based study of secondary school students using comparable data collection procedures.¹²

Measures

The Secondary Student Life Survey assesses demographic characteristics and bullying behaviors, and also includes items from national studies of alcohol and other drug use.^{12,17,41} Standard measures of substance use and abuse were included, such as cigarette use, binge drinking, nonmedical use of prescription medications, marijuana use, other drug use, the Drug Abuse Screening Test, short form (DAST-10), and the CRAFFT screening instrument.^{17,18,40}

Medical use of prescription opioids was measured using the following question: "The following questions are about the use of prescribed medicines. We are not interested in your use of over-the-counter medicines that can be bought in drug or grocery stores without a prescription, such as aspirin, Sominex®, Benadryl®, Tylenol PM®, cough medicine, etc. On how many occasions in [separate questions were asked for 1) your lifetime and 2) the past 12 months] has a doctor, dentist, or nurse prescribed the following types of medicine for you?" A separate question was asked for several classes of controlled medications including "prescribed pain medication (eg, opioids such as Vicodin®, OxyContin®, Tylenol 3® with codeine, Percocet®, Darvocet®, morphine, hydrocodone, oxycodone)." The response scale ranged from (1) 0 occasions to (7) 40 or more occasions. For purposes of analysis, 2 binary indicator variables (1 = yes, 0 = no) were created for indicating use of prescription pain medication in the past year or in the lifetime.

Medical misuse of prescription opioids was assessed by asking about the following behaviors as they relate to prescribed use of opioid analgesics: "On how many occasions (if any) in the past 12 months have you... 1) ...used too much (eg, higher doses, more frequent doses) of your prescribed medication? 2)...intentionally gotten

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