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## RESEARCH

## Prescription opioid use: Patient characteristics and misuse in community pharmacy

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## ABSTRACT

**Objectives:** Opioid pain medication misuse is a major concern for US public health. The purpose of this article is to: 1) describe the demographic and physical, behavioral, and mental health characteristics of patients who fill opioid medications in community pharmacy settings; and 2) describe the extent of opioid medication misuse behaviors among these patients. **Design:** We recruited and screened a convenience sample of patients with the use of a tablet computer–based assessment protocol that examined behavioral, mental, and physical health. Descriptive and inferential statistics were calculated to describe respondents and their opioid medication misuse and health characteristics.

**Setting:** Patients were screened in two urban and two rural community pharmacies in southwestern Pennsylvania.

**Participants:** Survey participants were adult patients filling opioid pain medications who were not currently receiving treatment for a cancer diagnosis.

**Intervention:** None.

**Main outcome measures:** Validated screening measures included the: Prescription Opioid Misuse Index, Alcohol Use Disorders Identification Test C, Short Form 12, Drug Abuse Screening Test 10, Primary Care Post-traumatic Stress Disorder (PTSD) screen, and the Patient Health Questionnaire 2.

**Results:** A total of 333 patients were screened (71.2% response rate). Nearly the entire population reported pain above and general health below national norms. Hydrocodone (19.2%) and morphine (20.8%) were found to be the medications with the highest rates of misuse—with hydrocodone having more than four times higher odds of misuse compared with other medications (adjusted odds ratio [AOR] 4.48, 95% confidence interval [CI] 1.1–17.4). Patients with positive screens for illicit drug use (AOR 8.07, 95% CI 2.7–24.0), PTSD (AOR 5.88, 95% CI 2.3–14.7), and depression (AOR 2.44, 95% CI 1.0–5.9) also had significantly higher odds for misuse compared with those with negative screening results.

**Conclusion:** These findings provide important foundational data that suggest implementation of regular opioid misuse screening protocols within community pharmacies. Such screening activities could foster a culture of prevention and overall reduction for misuse among patients filling opioid medications in community pharmacies.

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The greater than 400% increase in population average dose of opioid medications sold from 1997 to 2007,<sup>1</sup> in addition to the estimates of 2.1 million individuals reporting the nonmedical use of opioid pain medications,<sup>2</sup> makes opioid medication

misuse a serious public health problem in the United States.<sup>3,4</sup> This national crisis is of particular concern because misuse of opioid medications commonly occurs concomitantly with serious health problems,<sup>5–7</sup> including mental and behavioral health disorders<sup>5,6,8,9</sup> and various physical problems, such as chronic pain,<sup>6,9–12</sup> hepatitis,<sup>5,7</sup> and overall poor health.<sup>8,12</sup> Once physical dependence on opioids is established, symptomology associated with withdrawal potentiates relapse and resumption of misuse.<sup>13</sup> Fatal opioid medication overdoses from 2001 to 2013 increased more than 300%.<sup>14</sup> Today, 44 individuals die

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**Key Points****Background:**

- Opioid pain medication misuse is a serious concern for public health and for community pharmacy.
- This paper reports characteristics of patients who displayed misuse behaviors in community pharmacies.

**Findings:**

- These findings demonstrate possible need for routine opioid medication misuse screening and development of clinical intervention protocols for community pharmacists.

each day from opioid medication overdose.<sup>15</sup> Opioid medication misuse exacts a disproportionately heavy toll on rural populations, who commonly are underserved by social and health services.<sup>16–19</sup> In addition to health and social implications, opioid medication misuse has an estimated cost of \$56 billion annually to the US economy.<sup>20</sup>

Opioid medication misuse poses a significant challenge for effective community pharmacy practice.<sup>21–24</sup> Community pharmacists are uniquely positioned to assume a stronger influence in averting the manifold problems associated with opioid misuse. These professionals are ranked among the most trusted professionals in the US,<sup>25</sup> and community pharmacies are easily accessible, with more than 60,000 community pharmacies employing more than 170,000 pharmacists.<sup>26</sup> This opportunity is further enabled by their convenient location where opioid medications are legally filled but subsequently misused by some patients.<sup>27,28</sup> Pharmacists report concern about opioid medication misuse, yet they also report that they do not have sufficient tools and training to effectively address this problem.<sup>21–24</sup> Therefore, by acquiring specific assessment, intervention, and referral skills, community pharmacists have the capacity to be major resources for addressing opioid medication misuse and are well positioned for mobilization with the skills and tools to address this ongoing epidemic. Having identified this opportunity for community pharmacy, we recently reported preliminary data from the first project of its kind that screened patients for opioid medication misuse (e.g., taking opioid pain medications more often and/or at higher doses than prescribed, for the feelings they cause, to cope with problems, and doctor shopping) in one urban and one rural community pharmacy ( $n = 164$ ).<sup>29,30</sup> Initial findings showed that 14.3% of community pharmacy patients evinced misuse. Factors predicting opioid misuse were positive screens for illicit drug use (adjusted odds ratio [AOR] 12.96, 95% confidence interval [CI] 2.18–76.9) and post-traumatic stress disorder (PTSD; AOR 13.3, 95% CI 3.48–50.66). Significantly, the vast majority of patients were agreeable (78.1%) to opioid screening and discussing misuse.<sup>29,30</sup> These data provided a first glimpse into the complex patient environment that exists in the community pharmacy setting, because pharmacists regularly care for individuals at risk for and engaged in opioid medication misuse.

The present article reports results from our final sample of 4 pharmacies (2 urban and 2 rural) and doubles the number of patients in our preliminary sample. The intention of the present article is to have direct and practical clinical utility by assisting pharmacists in identifying misuse, understanding misuse and health characteristics, and caring for patients at risk for opioid medication misuse. This article specifically advances our previous work by: first, examining the demographic and health problem characteristics (individual health problems that have been demonstrated to elevate risk for opioid medication misuse) of community pharmacy patients based on type of opioid pain medication filled; second, reporting associations between opioid medication misuse and (1) opioid pain medications being filled and (2) patient health problems; and third, reporting frequencies of individual misuse behaviors among community pharmacy patients positive for prescription opioid misuse. These data provide a potentially helpful and robust view into medication misuse patterns among a clinical population within community pharmacy settings. These data are especially valuable given that pharmacists often have limited information other than the type of medication being filled by their patients. Owing to the high prevalence rates of medication misuse, there is an increased need for preventive measures, including identification of patients who may require additional care and attention. Our larger goal with this project is to be transformative to the field—establishing necessary foundational evidence to support regular screening for opioid medication misuse and to support the development of clinical interventions delivered by community pharmacists.

**Methods***Study Design and Sample*

The study was conducted in four independent community pharmacies in southwestern Pennsylvania. These pharmacy locations were selected according to their willingness to participate in an opioid misuse screening project and their location within regions having high rates of misuse within the state.<sup>31</sup> Staff at each pharmacy assisted in recruiting the sample by identifying potential respondents: which patients were physically present and filling any opioid pain medication at the pharmacy locations. Patients were first screened for eligibility with the use of a computer tablet with preloaded questions. The inclusion criteria were patients must have: 1) been 18 years of age or older; 2) not been currently receiving cancer treatment; and 3) not previously completed the survey ([Appendix](#)). Qualified prospective respondents were then provided with information via the tablet device about study goals, survey contents, investigator contact information, assurance of anonymity, and the project's exempt status with the University of Pittsburgh Institutional Review Board. Patients were also offered health and human services resources and referral information. Patients who completed the survey received a \$20 gift card. The study was funded by a University of Pittsburgh Central Research Development Fund grant.

*Assessment Protocol*

The survey was self-administered and contained a series of 45 questions that took approximately 10 to 15 minutes to

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