High-Risk Obtainment of Prescription Drugs by Older Adults in New Jersey: The Role of Prescription Opioids

Sarah L. Gold, MSW,* Kristen Gilmore Powell, PhD,* Michael H. Eversman, PhD,† N. Andrew Peterson, PhD,* Suzanne Borys, Ed.D,‡ and Donald K. Hallcom, PhD‡

OBJECTIVES: To explore the high-risk ways in which older adults obtain prescription opioids and to identify predictors of obtaining prescription opioids from high-risk sources, such as obtaining the same drug from multiple doctors, sharing drugs, and stealing prescription pads.

DESIGN: Logistic regression analyses of cross-sectional survey data from the New Jersey Older Adult Survey on Drug Use and Health, a representative random-sample survey.

PARTICIPANTS: Adults aged 60 and older (N = 725).

MEASUREMENTS: Items such as obtaining prescriptions for the same drug from more than one doctor and stealing prescription drugs were measured to determine high-risk obtainment of prescription opioids.

RESULTS: Almost 15% of the sample used high-risk methods of obtaining prescription opioids. Adults who previously used a prescription opioid recreationally had three times the risk of high-risk obtainment of prescription opioids.

CONCLUSION: These findings illustrate the importance of strengthening prescription drug monitoring programs to reduce high-risk use of prescription drugs in older adults by alerting doctors and pharmacists to potential prescription drug misuse and interactions. J Am Geriatr Soc 2016.

Key words: high-risk drug obtainment; older adults; opioids; prescription painkillers

The prescription of opioids by older adults doubled from 1999 to 2010.1 As the rate of prescription opioids has risen in this group, so too has the misuse of these drugs, including taking them at dosages higher than prescribed or for periods longer than prescribed.2 It has also been found that prescription drug sharing has increased in older adults, raising concerns about polypharmacy, inappropriate drug dosage, interaction effects with other medications, interactions with alcohol, and postponement of visits to the doctor.3,4 The obtainment of prescription opioids by older adults from sources other than a single doctor raises the risk of health consequences, ranging from interactions with other drugs to possible misuse and abuse.

Older adults’ prescription opioid use as a risky behavior has been discussed in the literature primarily in terms of misuse and abuse2 that, in these contexts, can be explained as a way that older adults are coping with the circumstances surrounding aging5–7 and can lead to health problems.8,9 However, the focus on substance abuse and misuse does not address the potential health problems of older adults who obtain prescription opioids from high-risk sources such as multiple doctors, friends, and family members. Although there is a great deal of literature on sharing prescription drugs in the overall population,3 literature on the ways older adults obtain prescription opioids, whether through sharing or other means, is limited. To the authors’ knowledge, no study has examined the various ways in which older adults are obtaining prescription opioids, making it difficult to design appropriate interventions to address high-risk prescription opioid use in this population.

To address the gap in knowledge regarding older adults’ sources of prescription opioids, the current study aimed first to describe the ways in which older adults who participated in a survey with a statewide, random sample obtained their prescription opioids. This information provides demographic context to the study of older adult obtainment of prescription opioids through high-risk sources. The second aim was to identify predictors of older adults obtaining prescription opioids from high-risk
sources. This analysis provides insight into possible points of intervention to reduce the obtainment of prescription opioids from high-risk sources and related consequences.

METHODS

Study Participants

This study used data from the New Jersey Older Adult Survey on Drug Use and Health (OASDUH)—a survey of all adults aged 60 and older in New Jersey conducted under the auspices of the New Jersey Division of Mental Health and Addiction Services. The intent of the survey was to gain a better understanding of the substance use patterns and related risk and protective factors in this population. Survey items fell into the domains of demographic characteristics, substance use (alcohol, tobacco, illicit and prescription drugs), mental and physical health, and social connectedness. The OASDUH sample pool included all New Jersey residents aged 60 and older with a landline or cellular telephone. The OASDUH surveyed 801 persons meeting these criteria. Respondents were contacted using lists of random-digit numbers for landline and cellular telephones. The survey was conducted from August 30 through September 5, 2012, with interviews lasting approximately 19 minutes. The margin of error for the entire sample was plus or minus 3.5 percentage points. The final respondent pool was modestly adjusted for age cohort and county to represent an accurate cross-section of the state’s population aged 60 and older; as such, the sample size of the weighted data was 842. The final adjusted sample size for this study was 725 after being restricted to respondents with responses for all items included in the regression models.

High-Risk Obtainment of Prescription Opioids Outcome

The dependent variable in the following analyses is the high-risk obtainment of prescription opioids. This variable is a composite of items meant to determine respondents’ sources of prescription opioids in ways that indicate the potential for prescription opioid misuse or negative drug interactions; these items are listed in Table 1. Respondents were asked to check all that apply. In the survey, one of the answer choices was “I got the prescription in some other way”; some respondents volunteered that they “got the prescription in a way that involved none of these options.” Because of the similarity between these answer choices, the two categories were combined. The variable was coded so that a person who answered yes to any of the answer choices was indicated to have high-risk obtainment of prescription opioids. This group accounted for 14.6% of the study sample.

Previous Prescription Opioid Use

The primary independent variable in this model was having previously used any prescription opioid recreationally, such as codeine, oxycodone, oxycodone hydrochloride, and hydrocodone. Of the study sample, 14.0% report having used such a drug recreationally.

Covariates

Multiple covariates were also included in these analyses to address demographic and other possible risk and protective factors. The selection of these variables was guided by the literature on predictors of prescription opioid misuse in older adults.8,10–14 The demographic variables included respondent age, sex, and education level. Variables that could act as risk or protective factors were social connectedness and reported health. Age was measured categorically (60–64, 65–69, 70–74, 75–79, 80–84, ≥85), as was education (≤high school, some college, ≥college degree). Social connectedness is a standardized composite of the respondent’s self-reported connectedness with family and friends using the Lubben Social Network Scale-6 (LSNS-6),7 which was developed for use in older adult populations.7 The LSNS-6 includes three items each about family and friends: the number of family and friends the person sees or hears from at least once a month, the number of family and friends the individual can speak with about private matters, and the number of family and friends the individual feels they could call on for help. Higher scores on this scale indicate higher social connectedness. Reported health is a standardized combination of the respondent’s self-reported mental and physical health collected using items from the Medical Outcomes Study 12-item Short-Form Survey.9 Lifetime illicit drug use was categorized as having used any illicit drugs. Cigarette use in the past year, measured dichotomously, was added as a dependency behavior that may be considered as a risk factor.

Statistical Analysis

A series of nested logistic regression models was developed to test the relationship between lifetime recreational use of prescription opiates and high-risk obtainment of prescription opioids by older adults. Model 1 was a bivariate regression of high-risk obtainment of prescription opioids on lifetime use of prescription opiates. The demographic variables age, sex, and education level were added as covariates in Model 2; social connectedness and overall health were added as covariates in Model 3; and lifetime opioid use was added as a covariate in Model 4.
illicit drug use and past year cigarette use were added as covariates in Model 4. Together, these models controlled for various demographic, social, and behavioral characteristics that could confound the relationship between previous use of prescription opiates and using high-risk methods to obtain prescription opiates. After analysis, odds ratios were converted to relative risk ratios for ease of interpretation.10

RESULTS

Sample Description

Women constituted nearly 60% of the sample (Table 2), and 25.7% of the sample was aged 60 to 64; 36.1% reported their highest level of education as a high school degree or lower, 36.4% reported attending some college, and 27.5% reported having obtained at least a college degree; 16.7% were employed full-time at the time of the survey; 53.8% were married (53.78%), 25.0% were widowed, and 21.1% were single, divorced, or separated; 87.3% were white, 6.5% black, 1.8% Hispanic, 1.7% Asian, and 2.5% American Indian or Alaskan Native. Thirty-two percent of the sample reported any lifetime use of illicit drugs. Respondent scores ranged from −2.7 to 2.5 on the standardized LSNS-6, with a standard deviation of 1.0. Standardized SF-12 scores ranged from −0.7 to 0.2, with a standard deviation of 0.2. Fourteen percent of respondents reported having ever used prescription opioids recreationally.

Additionally, 14.6% of the sample had used high-risk methods to obtain prescription opioids. Table 2 illustrates the different, not mutually exclusive, ways in which these opioids were obtained. The most common source of high-risk obtainment of prescription opioids was obtaining prescriptions for the same opioid from more than one doctor, with 6.1% respondents reporting having done so. Additionally, 6.8% of people with high-risk obtainment of prescription opioids report obtaining these drugs in some other way.

Logistic Regression Results

Odds ratios were converted to relative risk ratios for the logistic regression models seen in Table 3.10 As seen in the fully controlled model (Model 4) in Table 3, older adults who reported having previously used a prescription opioid recreationally had 3.0 (P ≤ .002) times the risk of high-risk behavior in obtaining prescription opioids as older adults who had not used such drugs recreationally, all else constant. This relationship holds, and strengthens, across Models 1 through 4. An additional finding of interest is that women had 1.6 (P = .04) times the risk of engaging in high-risk activities to obtain prescription opioids. Furthermore, older respondents were more likely than those aged 60 to 64 to have high-risk obtainment of prescription opioids; respondents aged 80 to 84 had 2.9 (P ≤ .04) times the risk of respondents aged 60 to 64 of high-risk obtainment of prescription opioids. Because these variables were significant in the regression model, they were tested as possible moderators, but no moderating effects were found.

DISCUSSION

As illustrated in the preceding analyses, previous recreational use of prescription opioids by older adults is associated with significantly greater odds of high-risk obtainment of prescription opioids than in older adults without previous recreational use of these drugs. This high-risk obtainment of prescription opioids may raise the risk of dependency on these drugs and, particularly in older adults, the possibility of negative interactions with other prescribed drugs. Deeper investigation into the high-risk ways older adults obtain prescription opioids shows that these drugs are primarily obtained from medical professionals. These findings shed light on a possible point in
time when an intervention may be particularly useful: when a doctor first prescribes an opioid.

The finding that most high-risk obtainment of prescription opioids is by obtaining the same prescription drug from more than one doctor highlights the importance of policies such as prescription drug monitoring programs (PDMPs) in reducing the risk of harmful drug interactions, overprescribing of drugs, and nonmedical drug use. PDMPs operate at the state level and track prescriptions of controlled substances. In theory, PDMPs allow for the monitoring of the prescription—and overprescription—of opioids, but these programs have not been successful in preventing drug abuse because of the ineffective use of data and a lack of data sharing between states and with other government entities.11

The findings of this study suggest that improving PDMPs is likely to improve the ways in which older adults use prescription drugs. Participation in such programs would also alert doctors and pharmacists to potential prescription drug misuse and interactions; interventions with individuals with such behaviors would improve health outcomes. To improve the functioning of PDMPs, these programs should be implemented nationally, which would eliminate the option of avoiding detection by PDMPs by filling prescriptions in another state.11 Prescribers and pharmacies could also use electronic prescriptions to reduce prescription fraud.12 To remove additional data entry burdens from prescribers and pharmacists, these electronic prescriptions could be transferred directly into the national PDMP system. This national, streamlined system would reduce prescription opioid misuse through preventing doctor shopping and the use of multiple pharmacies, thereby improving public health. Other policies such as prescription dropboxes, which provide locations for safe disposal of prescription drugs, could supplement the PDMP system and be implemented by state-funded regional prevention coalitions.

Although this study represents only the high-risk obtainment of prescription opioids, obtaining prescription opioids in these ways may be tied to nonmedical use of these drugs. Prescription drug abuse (of opioids and benzodiazepines) is an emerging problem in older adults15 and is one that may grow if prescription opioids are being misused. Therefore, the findings of this study present a possible opportunity to intervene in older adults’ prescription opioid use before it becomes a threat to their health and well-being.

The use of self-reported high-risk attainment of prescription drugs is a limitation of this study. Because there may be stigma attached to high-risk obtainment of prescription opioids, particularly in the categories that are illegal (e.g., writing a fake prescription or stealing drugs), respondents may have underreported this phenomenon. A further concern is that many respondents reported obtaining their prescription opioids in a manner not included as an answer choice, suggesting that there are other high-risk ways in which people are obtaining prescription opioids. This is a critical area for further exploration. There are also some gaps in the data, including which drugs were obtained in a high-risk manner, various reasons for these behaviors, and using age as a continuous variable. These data gaps also limited the ability to use certain variables such as alcohol dependency, previous illicit opioid use, and current or previous benzodiazepine use as covariates in the model.

In addition, women and very old adults have greater risk of high-risk obtainment of prescription drugs. These findings suggest that the healthcare needs of these groups

<table>
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<tr>
<th>Table 3. Logistic Regression Results (N = 725), High-Risk Obtainment of Prescription Opioids Regressed on Previous Nonmedical Painkiller Use</th>
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<tr>
<td><strong>Factor</strong></td>
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<tr>
<td><strong>Relative Risk Ratio (95% Confidence Interval)</strong></td>
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<td>Lifetime recreational use of prescription opioids</td>
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<td>Social connectedness (standardized scale)</td>
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<td>Mental and physical health (standardized scale)</td>
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<td>Lifetime illicit drug use</td>
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<td>Cigarette use in past year</td>
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<td>Constant</td>
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Model 1: unadjusted.
Model 2: adjusted for age, sex, and education.
Model 3: adjusted for age, sex, education, social connectedness, and mental and physical health.
Model 4: adjusted for age, sex, education, social connectedness, mental and physical health, lifetime illicit drug use, and cigarette use in past year.

\(^a_P<.05, \(^b_P<.01, \(^c_P<.001.\)
are not being met in the current system. Further research in this area could explore why older adults, particularly women and very old adults, are engaging in high-risk behaviors to obtain prescription opioids. Some hypothesized reasons for these behaviors include limited income, prescription drug dependence, lack of health insurance, and quality of health insurance. For example, people without health insurance or with expensive deductibles may seek informal treatment and other ways of obtaining prescription opioids, although it is likely that individuals' motivations extend beyond these reasons. To ascertain these reasons, it would be useful to collect qualitative data from respondents who report high-risk methods of obtaining prescription opioids. To further explore the drugs that are being obtained using high-risk methods, data on the types of drugs obtained in these ways could be gathered. Examining the type and quality of health insurance as a moderator of high-risk obtainment of prescription opioids could be a further area of study. This research domain can be tied into the discussion of medicine sharing (Are people who obtain prescription drugs in high-risk ways more likely to share their prescription medicines with others?) and expand the discussion to include other high-risk sources of prescription drugs.

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Conflict of Interest: None.

Author Contributions: Gold: analysis, writing of article. Powell: conceptualization of instrument, data cleaning, providing insights into clinical implications of the research. Eversman: compiled and drafted the literature review, assisted with revisions. Peterson: conceptualization of instrument, data cleaning, methodological guidance. Borys, Hallcom: conceptualization of data collection instrument and data collection process. All authors reviewed drafts of the article and gave final approval of the version to be published.

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