



# The Causes and Consequences of Opioid Use among Older Americans: A Panel Survey Approach

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Over the past 25 years, a dramatic increase in opioid prescriptions in the United States has fueled a deadly trend of abuse and overdose from this class of drugs. From 1999 to 2015, the per capita sale of prescription opioids increased by 356% and the number of opioid overdose deaths increased by 300%. According to the U.S. Centers for Disease Control and Prevention (CDC), as of 2019, almost 247,000 Americans have died from prescription opioid overdose since 1999.

As this public health crisis has come to light, researchers have worked to understand the dynamics of the opioid epidemic, identify who has been most affected by the crisis, and why. In addition to its human toll, the opioid epidemic has had repercussions for the social and economic stability of the hardest hit individuals and communities. Although the direct health consequences and policies to address them have been an area of active research, in this analysis, we focus on less studied consequences: the role opioid prescriptions have played in disability among older Americans.

The relationship between opioids and disability is complex. The initial promise of drugs such as OxyContin was the ability to effectively manage chronic pain, thereby potentially allowing for greater work capacity. However, the addictive nature and the direct and side effects of powerful opioids can interfere with steady employment. This complexity creates a problem for the researcher: Do opioids lead to lower employment, or do those who have trouble working due to chronic health conditions both work less and take more opioids? That is, to what extent is opioid use a cause of work disability or a consequence of it?

To answer this question, this study relies on a data set that tracks older Americans over time, the Health and Retirement Study (HRS). In particular, we employ newly available prescription drug use data from the 2009 Health and Well-Being (HWB) HRS survey module, administered near the height of opioid prescriptions. By interviewing and reinterviewing the same respondents, we can observe individuals before they start using opioids as well as up to a decade after this initiation. We can, therefore, control for a

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rich array of preinitiation measures and, comparing across 2009 opioid prescription status, estimate the differences that arise in mortality, work-limiting health conditions, and disability program participation. We can also look at how those with 2009 opioid prescriptions differ in these outcomes according to other prescription drugs they take, namely, benzodiazepines and gabapentin, both of which have been associated with significantly higher health risk when taken alongside opioids. Our analysis is limited to older Americans, since the HRS is nationally representative of individuals older than 50 and their partners. However, work disability in this population is substantially more prevalent than among younger individuals, potentially making them more at risk of permanent disability than younger cohorts.

We find that, indeed, those 50 and older with 2009 opioid prescriptions are substantially more likely to have died in the years following the 2009 HWB survey. We account for this differential mortality through a reweighting approach, and then estimate differences in our disability outcomes. We find that our analytic approach is valid on its face: Although we limit our controls to 2008 measures alone, those with and without 2009 opioid prescriptions have similar health and disability status in the interviews preceding 2008. We next look forward, estimating the consequences of 2009 opioid use on health and employment outcomes in 2010, 2012, 2014, 2016, and 2018.

Our findings are significant, both statistically and in terms of magnitude. By 2014, those with 2009 opioid prescriptions were 15 percentage points more likely to

report having a work-limiting health condition than otherwise similar respondents without 2009 opioid prescriptions. This difference continues through 2018, the end of our data. Although we see that the labor force participation of those with 2009 opioid prescriptions declines over our eight-year follow-up window, this decline is not statistically significant. Instead, the consequences of the higher levels of work disability manifest directly in terms of disability program participation: In 2016 and 2018, those with 2009 opioid prescriptions were approximately 30 percentage points more likely to have applied for or be receiving Social Security Disability Insurance (SSDI) or Supplemental Security Income (SSI) benefits than their peers who didn't have an opioid prescription in 2009. Given that baseline rates of participation in these programs were only 11%, those with 2009 opioid prescriptions were nearly four times more likely to participate in SSDI/SSI.

We examined additional differences by benzodiazepine and gabapentin co-use: Unfortunately, the sample size limited the statistical power to detect differences, and we did not observe any mortality effects by 2009 opioid prescription status that differ from the overall gap previously estimated. However, the structure of the sampling process itself may limit our ability to detect higher rates of mortality: Co-users of these drugs must survive long enough to accurately respond to the 2009 HWB survey module. If the mortality effects of co-use manifest quickly, we would not be able to detect them in these data. ❖

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