

## Social Determinates of Health Relating to Manual Labor, Chronic Pain, and Risk of Opioid Addiction

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### ABSTRACT

This brief report investigates the potential correlation between manual labor and opioid addiction, focusing on contributing factors such as chronic pain, regular exercise, healthcare access, and housing stability. Although manual labor is associated with higher rates of work-related injuries and chronic pain, the review finds no strong, direct correlation between manual labor and increased opioid addiction rates. The relationship is complex and influenced by a range of socio-economic factors. The findings highlight the need for further research, particularly longitudinal studies, to explore these dynamics in depth and develop targeted interventions for at-risk populations.

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### Abbreviations

**PO:** Prescription Opioid SES – Socioeconomic Status

**POD:** Prescription Opioid Overdose

### Introduction

Socioeconomic status (SES) plays a crucial role in determining the nature of a patient's occupation and associated health outcomes. Individuals with higher SES generally have access to less physically demanding jobs, whereas those with lower SES often have jobs involving significant, repetitive physical strain—an intersection with numerous social determinants of health. This report examines how SES-related factors such as physical activity, food security, and mental health impact chronic pain and opioid addiction. Understanding the intersection of manual labor, socioeconomic factors, and opioid addiction is essential for developing effective interventions and outreach strategies. By exploring how these variables interact, we can address the challenges faced by manual laborers and work towards reducing opioid dependency in a variety of populations.

### Background

#### Manual Labor and Work-Related Injuries

The distribution of manual labor varies significantly by region, affecting the frequency of workplace injuries. A study investigating prescription opioid (PO) poisoning across urban and rural areas in California used manual labor as a proxy for work-related physical injuries [1]. Findings revealed that industries like wholesale trade and construction had the highest rates of medical needs for POs, while agriculture and mining had comparatively lower rates. Additionally, rural and suburban regions with higher manual labor prevalence exhibited elevated incidences of PO-related hospital discharges.

For instance, in 2020, construction laborers accounted for 27.8% of incidents involving falls, slips, or trips, with a significant number involving falls from heights. Falls, slips, or trips were responsible for 31.2% of all fatalities among construction workers, and construction laborers accounted for 42.9% of all fatal falls in these industries [2].

#### Regular Exercise

Manual labor workers are generally less likely to engage in regular exercise outside their occupational duties. Research indicates that individuals engaged in high levels of occupational physical activity often report lower levels of aerobic physical activity compared to those with less physically demanding jobs [3]. Regular aerobic exercise has analgesic effects that can potentially reduce opioid use for pain management.

#### Healthcare Access

Access to healthcare varies significantly by region. Urban areas generally offer more accessible healthcare compared to rural regions. A study conducted in California found that regions with better healthcare access had higher rates of PO-related hospital discharges [1]. Increased healthcare access is linked to higher opioid prescription rates, contributing to misuse. Research out of Indiana showed that higher densities of healthcare providers correlated with increased opioid prescriptions and abuse [4]. Factors like aggressive marketing and inadequate pain management training among providers have exacerbated the opioid epidemic [5].

#### Housing Security

Despite significant public health concerns about homelessness and opioid overdose in the U.S., limited evidence exists on whether homelessness increases opioid overdose risk. A cross-sectional analysis of individuals with at least one ED visit or hospitalization in Florida, Maryland, Massachusetts, and New York showed that individuals experiencing homelessness were at higher risk of

opioid-related events compared to low-income housed individuals. The data revealed that non-Hispanic White females had the highest risk among individuals experiencing homelessness, while non-Hispanic White males had the highest risk among the low-income housed population. This study indicated a possible correlation between individuals experiencing homelessness and risk of opioid use events/hospitalizations in specific states [6].

### Conclusion

This brief report examined the correlation between manual labor and opioid addiction, exploring factors such as regular exercise, healthcare access, and housing stability. The findings suggest that while manual labor is associated with higher rates of work-related injuries and chronic pain, it does not directly correlate with increased opioid addiction rates. The relationship is complex, influenced by socio-economic factors including healthcare access and housing security [7-9].

### Future Research Directions

The review highlights the need for more in-depth studies to understand the nuanced relationship between manual labor and opioid addiction. Due to the limitations of current research, the next step would be to consider surveying laborers in outdoor occupations, food service, and similar industries. Specifically, longitudinal studies are required to explore how socio-economic factors interact with manual labor and opioid use over time. Research should focus on detailed analyses of how variables such as income, education, and healthcare access impact opioid dependency. This understanding is crucial for developing targeted interventions and support mechanisms aimed at reducing opioid dependency among workers and other at-risk populations.

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