

WHITE PAPER

**Social Drivers of Health
and Mental Health:**
Investigating the Impact
on Major Depressive
Disorder Outcomes



Major depressive disorder (MDD) affects millions of people worldwide and has profound influence on quality of life and healthcare system resource use and cost. [Christie Teigland, Ph.D.](#), led groundbreaking research into how social risk factors impact hospitalization rates and healthcare costs for individuals diagnosed with major depression.¹

This work examined the relationship of social factors such as income, education, and language proficiency with healthcare outcomes across two large insurance populations. The resulting insights can help guide healthcare providers and policymakers as they attempt to address inequities and reduce the costs of healthcare for people with severe mental illness.

Understanding Major Depressive Disorders

MDD, commonly known as clinical depression, is a serious mood disorder characterized by persistent feelings of sadness and disinterest in ordinarily enjoyable activities lasting at least two weeks. According to diagnostic criteria, this depressive period is typically accompanied by various symptoms, including eating problems, sleep disturbances, fatigue, anxiety, unexplained physical issues, and in some cases, suicidal thoughts.

Depression represents [a leading cause of disability](#) worldwide. It affects people across all demographic groups, with approximately [21 million adults](#) (8.4% of the adult population) experiencing at least one major depressive episode. Although depression can affect anyone, [higher prevalence](#) is found among females, young adults aged 18–25, and multiracial individuals. Despite the availability of treatments, only about two-thirds of those affected receive care, and adherence to treatment is low.

The economic impact is also substantial, with associated direct costs including medical services, medications, suicide-related expenses, and workplace productivity losses estimated at approximately [\\$326 billion](#) in 2018 in the U.S. alone.

Uncovering the Social Factors in Mental Health

Social drivers of health (SDOH) significantly impact mental health outcomes. These factors include socioeconomic status, education, neighborhood conditions, access to healthcare, and language barriers.

Demographic risk factors such as age, sex, race, and ethnicity interact with social, economic, and environmental risk factors to place certain populations at higher risk for mental disorders and worse health outcomes.^{2,3,4} Lacking a college education, being unemployed, and being non-White are all associated with slower improvement of MDD symptoms.

Conversely, those with higher incomes tend to show faster improvement. These patterns highlight the complex relationship between social circumstances and depression outcomes.

Pioneering Research into Social Drivers and Depression

Christie Teigland, Ph.D., led a [comprehensive study](#) examining how SDOH affect hospitalization rates and healthcare costs for patients with MDD. The team's groundbreaking work, published in the *Journal of Managed Care & Specialty Pharmacy*, represents one of the largest studies of its kind. The study analyzed real-world data from nearly 2 million patients with MDD across nationally representative commercial and Medicaid insurance populations.

The team employed a retrospective observational design to identify patients aged 18 and older, who were newly diagnosed with MDD between July 2016 and December 2018. The researchers utilized Inovalon's Medical Outcomes Research for Effectiveness and Economics® (MORE²) Registry, a large, nationally representative administrative database containing comprehensive medical and pharmacy claims data.

A critical innovation in this research was the linking of SDOH data to patients at the 'near-neighborhood' level. This approach allowed the team to link MDD patients to socioeconomic and community characteristics aggregated at the 9-digit ZIP code level, representing approximately 32 million geographic areas with an average of about 20 households each – very close proxies for individual SDOH characteristics.

The team assessed various social factors, including household income, marital status, home ownership, education level, English language proficiency, rurality, and access to healthcare providers. They also examined clinical characteristics using the [Charlson Comorbidity Index](#) (CCI), a measure of overall burden of illness, and the presence of individual chronic conditions common in patients with severe mental illness.



Revealing Disparities Between Insurance Populations

The research revealed striking differences between patients with commercial insurance and those with Medicaid coverage. Of the nearly 2 million patients studied, approximately half had commercial insurance, and half had Medicaid. While the mean ages were similar (around 43 years) and both groups had more female patients (68% commercial; 71% Medicaid), the social and economic circumstances of the two insured populations differed substantially.

Commercially-insured patients had a mean household income of \$75,044, with 53% being married and 77% owning their homes. About 64% had completed high school or less, and nearly 3% had Limited English Proficiency (LEP). In contrast, Medicaid patients faced more challenging circumstances, with a mean household income of \$46,708 or 38% lower. More lived alone (68% vs. 50%), fewer were married (42% vs. 53%), and fewer owned their homes (55% vs. 77%). A higher percentage had completed only high school or less (81% vs. 64%), and twice as many had LEP (6% vs. 3%).

The burden of illness also was greater among Medicaid patients, with a mean CCI score of 1.0 compared to 0.5 for commercial patients. Chronic conditions such as hypertension, diabetes, asthma, and chronic obstructive pulmonary disease were all more prevalent in the Medicaid population. requirement, there is much focus on race and ethnicity and health plans are working on imputing data at least from indirect sources.

Impact on Hospitalization and Healthcare Costs

The differences in social drivers translated into significant disparities in healthcare utilization and costs. The researchers found that nearly one-third (30%) of Medicaid-insured patients with MDD had at least one hospitalization during the follow-up period, with a mean length of stay of seven days. Their total healthcare costs averaged \$21,467 annually. Commercially-insured patients had substantially lower hospitalization rates (15%), shorter hospital stays (six days), and lower total costs of \$14,531 annually.

The research team found several significant patterns when examining the factors most strongly associated with hospitalizations. Female patients were less likely to be hospitalized than male patients in both insurance groups. Patients with more comorbidities had approximately 30% higher hospitalization rates for each one percentage point increase in CCI. Treatment patterns also showed notable associations with outcomes. Compared to patients receiving antidepressants only, those prescribed combination therapies – particularly antipsychotics plus anti-anxiety medications – had significantly higher hospitalization rates and costs across both insurance populations.

Social Factors and Complex Associations

One of the most valuable contributions of the research was the identification of how various social drivers were associated with healthcare utilization and costs, suggesting economically driven disparities in health outcomes. Household income showed a clear inverse relationship with hospitalizations: The higher the annual household income, the fewer hospitalizations occurred. This pattern was consistent across both commercially-insured and Medicaid populations.

Interestingly, LEP showed divergent associations between the two insurance groups. For Medicaid patients, LEP reduced the likelihood of hospitalizations by more than 70% and was associated with lower costs for Medicaid patients. In contrast, LEP was associated with increased hospitalizations and higher costs for commercially insured patients. This paradoxical finding suggests potential issues with healthcare access for Medicaid patients who face language barriers.

Living in rural or suburban areas was associated with fewer hospitalizations compared to urban areas for both insurance groups. However, living in areas with no shortage of mental health practitioners was associated with higher hospitalization rates and costs. This finding might indicate that greater access to mental health specialists results in more detection and treatment of severe depression, leading to appropriate hospitalizations when necessary.



Tackling the Burdens of LEP and Education Levels

One of the most significant findings relates to the impact of language barriers on depression care. Not speaking English well or at all was significantly associated with lower costs for Medicaid patients but higher costs for commercially-insured patients. This finding aligns with previous research showing that individuals with LEP often face substantial obstacles in accessing mental healthcare. These barriers can include difficulty recognizing the need for treatment, challenges communicating symptoms, limited trust in healthcare teams, and problems understanding diagnoses or medication instructions.

The disparity in hospitalization rates between LEP patients with different insurance types suggests potential systemic issues in how Medicaid services are delivered to patients facing language barriers. It appears that despite potentially needing care, these individuals may not be receiving necessary hospital-based treatments, which could lead to worse outcomes over time.

Another important finding from the study relates to education levels. A high percentage of patients with MDD – 64% of commercially-insured and 81% of Medicaid patients – had only a high school education or less. This limited educational attainment was associated with higher hospitalization rates for both insurance groups compared to those with higher levels of education. Previous research has consistently shown that lower education levels are associated with a greater risk for depression and poorer access to mental healthcare. Individuals with less education may have limited health literacy, fewer resources for seeking specialized care, and greater vulnerability to the stresses associated with economic insecurity.



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The Path to Addressing Health Inequities

This research underscores the need to integrate social drivers into how we understand, treat, and fund care for MDD. Improving health outcomes and reducing costs requires looking beyond clinical factors to include the broader social and economic realities of patients' lives.

The findings suggest several potential approaches for improving care.

Recommendations for healthcare systems:



Enhance screening for social risk factors



Provide additional support for patients with Limited English Proficiency (LEP)



Expand access to mental health providers



Develop targeted interventions for populations with lower educational attainment

Recommendations for policymakers:



Address social factors that drive disparities, particularly within Medicaid programs



Increase coverage for mental health services



Boost provider access in underserved areas



Reduce language barriers that limit effective care

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With Inovalon's primary source Real-World Data™ and research expertise and research expertise, you'll gain the clarity you need to generate evidence and drive informed decisions.

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Sources

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Christie Teigland leads the design and implementation of studies focused on quality measurement, health equity, and health economics and outcomes research. She works closely with health plans, providers, and life science organizations to develop actionable real-world data insights. Dr. Teigland co-chaired the National Quality Forum (NQF) Scientific Methods Panel for four years and served on the Pharmacy Quality Alliance (PQA) Quality Measure Expert Panel and as co-chair of PQA's Health Equity Technical Expert Panel, as well as on many Centers for Medicare & Medicaid (CMS) expert panels. She has served as principal investigator on large foundation and government-funded projects over two decades focused on improving healthcare quality. Dr. Teigland earned her Ph.D. in Economics and Econometric Forecasting from the University of New York at Albany.