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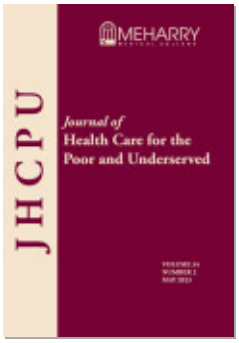


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ORIGINAL PAPER

# Psychiatric Admissions Among Undocumented Immigrants at an Urban County Hospital

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*Abstract:* Little is known about the inpatient mental health needs of undocumented immigrants in the United States. Based on existing literature, we hypothesized that undocumented patients would have fewer psychiatric admissions than documented patients. We reviewed 2019 inpatient admission data for Hispanic/Latino patients at an urban hospital. Patients were coded as *undocumented* or *documented* using insurance proxies. Multivariable logistic regression was used to report odds ratio of admission diagnoses of interest by documentation status. There were no significant differences in psychiatric admissions between undocumented patients (2.1%) and documented patients (2.8%) (p=.77). Compared with documented counterparts, undocumented patients were more likely to be admitted for alcohol-related disorders (AOR=1.59, 95%CI=1.31–1.93) but had lower proportions of admission for substance-related disorders, mood disorders, anxiety disorders, and suicide and intentional self-inflicted injury among others. Future studies should examine factors contributing to alcohol use disorder and barriers to accessing and using mental health care.

*Key words:* Undocumented immigrants, hospitalization, mental disorders, substance-related disorders.

In 2018, there were 10.7 million undocumented immigrants in the U.S., 78% of whom came from Latin American countries.[1,2] Immigration status is increasingly being recognized as a social determinant of health, given the restrictions associated with it on access to resources and opportunities, including health insurance, education, and work.[3] There is evidence suggesting that Latino immigrants are physically healthier than

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their U.S.-born counterparts, possibly due to younger age and selection bias associated with migration.[4–6] However, the literature on mental health among undocumented immigrants is less robust. Thus, many facets of mental health among this population have yet to be explored.

The overall epidemiological research suggests that undocumented immigrants have a similar prevalence of mental health disorders as documented immigrants, as well as a lower prevalence of mental health disorders compared with their U.S.-born counterparts.[7,8] For example, one study that analyzed California Health Interview Survey data found that 11% of Latino participants who were undocumented, 12.7% of Latino participants with green cards, 12.2% of Latino participants who were naturalized, and 21.6% of U.S.-born Latino participants reported needing help for a mental health, alcohol, or drug problem.[8] However, it is well known that immigration poses a set of mental health stressors associated with migration and resettlement, including language barriers and differing cultural norms.[9] In one review, the authors found that undocumented immigrants who reported fear of deportation tended to experience higher anxiety and more depressive symptoms than their documented counterparts.[10] The additional burdens that manifest from lack of legal immigration status, including threat of deportation and separation from family, are unique stressors that undocumented immigrants face.[9]

Undocumented immigrants with mental health disorders are less likely than documented and U.S.-born counterparts to use mental health services, such as visiting a mental health professional.[8] The differences in utilization based on legal immigration status may be partly explained by barriers such as lack of insurance, high costs of mental health care, language discordance, somatic or uncharacteristic presentations of psychiatric symptoms, and perceived stigma surrounding mental illness.[8,11,12] Concerns about immigration status and fear of deportation might also increase reluctance to seek mental health services.[10,12] Additionally, there may be normalization of mental health disorders. A qualitative study of undocumented college students found that participants normalized their mental health strain as part of their unstable immigration status and felt treatment was futile.[13]

To summarize, existing research reveals lower or equal prevalence of mental health disorders and lower use of health care services among undocumented immigrants than their documented counterparts and/or U.S.-born counterparts; however, little is known about mental health care utilization patterns with respect to hospitalization for inpatient management of severe mental illness and/or acute psychiatric symptoms. To our knowledge, there are no published studies on inpatient admissions for psychiatric disorders among undocumented immigrants. The primary objective of this study was to investigate differences in psychiatric admissions between undocumented and documented patients. As most of the literature on mental health among undocumented immigrants focuses on those from Latin America, we also chose to focus on patients of Hispanic/Latino ethnicity. We hypothesized that among Hispanic/Latino patients at our large county hospital, undocumented patients would have a lower proportion of total psychiatric admissions than documented patients. The second objective of this study was to investigate the categories of mental illnesses among those admissions. Under-

standing diagnoses driving psychiatric admissions among undocumented patients could provide insight into needed resources and support for patients after hospital discharge.

## Methods

**Data**. We conducted a retrospective analysis of all inpatient admissions for acute psychiatric disorders at Los Angeles County and University of Southern California (LAC+USC) Medical Center from January 1, 2019 to December 31, 2019. Data were obtained by merging two datasets: Cerner PowerInsight, the health systems electronic medical records system, and Vizient Health Systems Data, a billing and administrative claims database. All data were de-identified in compliance with the Health Insurance Portability and Accountability Act requirements. There were 27,965 total inpatient admission encounters in 2019. After limiting our sample to those who met inclusion criteria (see below), our final analytic sample included 14,770 admissions. All data were reported at the admissions encounter level. This study was deemed exempt by the University of Southern California Institutional Review Board.

**Study participants**. Our study sample was limited to Hispanic/Latino adults, aged 18 years and older, who were stratified based on legal immigration status as documented or undocumented. As we used insurance status as a proxy for documentation status, our control group encompassed both documented immigrants and U.S.-born Hispanic/Latinos as a single group.

**Variables**. Our primary explanatory variable was immigration status, which was determined using insurance status as a proxy. Eligibility for full-scope Medi-Cal (California's version of Medicaid) is based on various categories, including income, supplemental security income, disability, and immigration status. Those who meet other requirements such as income level, but are ineligible for full-scope Medi-Cal due to immigration status (i.e. do not have citizenship or green card status), can instead obtain restricted-scope Medi-Cal.[14] Eligibility for full- versus restricted-scope Medi-Cal is solely based on immigration status. Restricted-scope Medi-Cal covers limited services, namely emergency medical services and hospitalization if warranted, including for psychiatric illnesses.[6,14] Those who had restricted-scope Medi-Cal were coded as *undocumented* and were the primary group of interest. Full-scope Medi-Cal patients served as the control group and were coded as *documented*.

Our outcome of interest was the primary reason for admission. To determine this, we used the first-listed Clinical Classifications Software (CCS) code. Clinical Classifications Software, based on the *International Classification of Diseases, 10th Revision, Clinical Modification* (ICD-10-CM), was created to aggregate diagnostic codes into meaningful categories for quality improvement research.[15] Clinical Classifications Software codes were used until the release of the new classification system, CCS Refined, in May 2021. We included all 15 CCS codes for categories of psychiatric disorders. Hereafter, psychiatric category refers to the CCS codes and all ICD-10-CM diagnoses grouped within the respective codes. For example, CCS code 651 includes all ICD-10-CM diagnoses for anxiety disorders, code 657 includes all diagnoses for mood disorders including major depressive disorder, and code 660 includes all diagnoses for alcohol-related disorders.

**Analysis**. We used descriptive statistics to summarize demographic and admission

characteristics. Patient demographic characteristics included age, sex, primary language, and housing status. Admission characteristics included length of stay and history of previous admission encounters.

For each psychiatric category, we first calculated the proportion of encounters out of the total number of psychiatric encounters. We then conducted a two sample proportions test to compare the proportion of encounters within each psychiatric category between documented and undocumented patients. Alcohol-related disorders was ultimately the only category with sufficient patient numbers to apply multivariable logistic regression to report the adjusted odds ratio (AOR) of admission compared with all other reasons for admission. Our original model included all patient demographic and admission covariates. We found that housing status, history of repeated admissions, and length of stay did not substantially change our outcome of interest. However, we included housing status in the final model to account for the increased barriers to mental health care and the increased prevalence of severe mental health conditions among homeless patients.[16] We did not include the latter two covariates for the sake of model parsimony. The final model was adjusted for age, sex, primary language, and housing status. All statistical analysis was conducted using SAS statistical software version 9.4 (SAS institute, Cary, North Carolina) with an alpha level of .05 for statistical significance.

## Results

Table 1 presents descriptive statistics of patient demographics and admission characteristics at the encounter level. There were 14,770 inpatient admissions in 2019 that met criteria, of which 6,167 (41.8%) occurred among undocumented patients and 8,603 (58.3%) occurred among documented patients. Sex distribution across admissions was 52.9% and 47.1% for males and females, respectively. Primary language distribution differed between undocumented and documented patient encounters. Most undocumented patient encounters were for Spanish speakers (90.0%), whereas documented patient encounters were split between English and Spanish speakers (45.0% and 54.7%, respectively). There were 365 (5.9%) encounters for unhoused undocumented patients compared with 863 (10.0%) encounters for unhoused documented patients. Repeat encounters were similar among undocumented and documented patients, accounting for 46.7% and 45.9% of all admissions, respectively. Undocumented patients had slightly shorter lengths of stay at a mean of 4.5 days, compared with 5.8 days for documented patients.

Table 2 provides the results of our proportion tests. Of the 14,770 total admissions in 2019, only 719 (4.9%) were for primary psychiatric diagnoses. Undocumented and documented patients did not differ in their overall proportions of admissions with a primary psychiatric diagnosis. There was a total of 304 primary psychiatric encounters among undocumented patients and 415 among documented patients, 2.1% and 2.8% respectively of all admissions in that year (p=.77). Admissions for alcohol-related disorders (n=578, 80.4%) were the most common overall; undocumented patients had significantly higher proportional admissions (n=286, 94.1%) in this category compared with documented counterparts (n=292, 70.4%) (p<.001). Among admissions within this category, the majority were ICD-10-CM codes related to "alcohol dependence and

## Table 1.

### DESCRIPTIVE TABLE OF INPATIENT ENCOUNTERS AMONG HISPANIC/LATINO PATIENTS AT LAC+USC MEDICAL CENTER IN 2019[A]

| Demographic | Undocumented N=6,167 | | Documented N=8,603 | | Total N=14,770 | |
|---|---|---|---|---|---|---|
| Age, mean (SD) | 50.1 | (14.3) | 48.7 | (17.7) | 49.3 | (16.4) |
| Sex, N (%) | | | | | | |
| Male | 2996 | (48.6%) | 4810 | (55.9%) | 7806 | (52.9%) |
| Female | 3170 | (51.4%) | 3789 | (44.0%) | 6959 | (47.1%) |
| Housing status, N (%) | | | | | | |
| Homeless | 365 | (5.9%) | 863 | (10.0%) | 1228 | (8.3%) |
| Not homeless | 5802 | (94.1%) | 7740 | (89.0%) | 13542 | (91.7%) |
| Encounters, N (%) | | | | | | |
| One encounter | 3289 | (53.3%) | 4655 | (54.1%) | 7944 | (53.8%) |
| Multiple encounters | 2878 | (46.7%) | 3948 | (45.9%) | 6826 | (46.2%) |
| Length of stay, mean (SD) | 4.5 | (7.1) | 5.8 | (10.2) | 5.2 | (9.1) |
| Primary language, N (%) | | | | | | |
| English | 609 | (9.9%) | 3867 | (45.0%) | 4476 | (30.3%) |
| Spanish | 5548 | (89.9%) | 4702 | (54.7%) | 10250 | (69.4%) |
| Other | 3 | (.1%) | 16 | (.2%) | 19 | (.1%) |

*Note*
[a]Because of some missing info, not all categories of data add up to total.

abuse" (n=328, 56.7%), and the second most common ICD-10-CM codes were related to "alcoholic cirrhosis" (n=219, 37.9%).

Admissions for substance-related disorders were the second most common. These constituted 1.6% (n=5) of psychiatric encounters for undocumented immigrants, compared with 10.8% (n=50) for documented patients (p<.001). For all other psychiatric categories, the proportional admission rates among undocumented patients were lower than those among documented counterparts. This was statistically significant for admissions related to anxiety disorders; mood disorders; delirium, dementia, and amnestic disorders; schizophrenia and other psychotic disorders; and suicide and intentional self-inflicted injury. Each of these categories encompassed less than 2.0% of total psychiatric admissions among undocumented patients.

We conducted multivariable logistic regression models to examine elevated admission for alcohol-related disorders among undocumented patients after controlling for covariates (Table 3). In the adjusted model, undocumented patients were significantly more likely to be admitted for alcohol-related disorders compared with their documented counterparts (AOR=1.59, 95% confidence interval [CI]=1.31–1.93). Among the entire sample, male patients were significantly more likely than female patients to

## Table 2.

### INPATIENT PSYCHIATRIC ENCOUNTERS AMONG HISPANIC/LATINO PATIENTS AT LAC+USC MEDICAL CENTER IN 2019[A]

| CCS | Category Number and Name | Undocumented N=304 | | Documented N=415 | | Total N=719 | |
|---|---|---|---|---|---|---|---|
| | | N | % | N | % | N | % |
| 650 | Adjustment disorders | 0 | .0 | 2 | .5 | 2 | .3 |
| 651 | Anxiety disorders | 1 | .3* | 9 | 2.2* | 10 | 1.4 |
| 652 | Attention-deficit, conduct, disruptive behavior disorders | 0 | .0 | 0 | .0 | 0 | .0 |
| 653 | Delirium, dementia, and amnestic disorders | 2 | .7** | 20 | 4.8** | 22 | 3.1 |
| 654 | Developmental disorders | 0 | .0 | 0 | .0 | 0 | .0 |
| 655 | Disorders usually diagnosed in infancy, childhood, or adolescence | 0 | .0 | 0 | .0 | 0 | .0 |
| 656 | Impulse control disorders | 0 | .0 | 0 | .0 | 0 | .0 |
| 657 | Mood disorders | 1 | .3* | 10 | 2.4* | 11 | 1.5 |
| 658 | Personality disorders | 0 | .0 | 0 | .0 | 0 | .0 |
| 659 | Schizophrenia and other psychotic disorders | 0 | .0* | 8 | 1.9* | 8 | 1.1 |
| 660 | Alcohol-related disorders | 286 | 94.1** | 292 | 70.4** | 578 | 80.4 |
| 661 | Substance-related disorders | 5 | 1.6** | 45 | 10.8** | 50 | 7.0 |
| 662 | Suicide and intentional self-inflicted injury | 5 | 1.6** | 24 | 5.8** | 29 | 4.0 |
| 670 | Miscellaneous mental health disorders | 4 | 1.3 | 5 | 1.2 | 9 | 1.3 |

*Notes*
[a]Data are expressed as column percentages.
*p<.05
**p<.01
CCS= Clinical Classifications Software

## Table 3.

### MULTIVARIABLE LOGISTIC MODEL OF ADMISSION FOR AN ALCOHOL-RELATED DISORDER AMONG HISPANIC/LATINO PATIENTS AT LAC+USC MEDICAL CENTER IN 2019

| | OR | 95% CI |
|---|---|---|
| Legal status | | |
| Documented | Ref.[a] | |
| Undocumented | 1.59 | 1.31–1.93 |
| Age | 1.02 | 1.01–1.03 |
| Sex | | |
| Female | Ref.[a] | |
| Male | 15.5 | 10.74–22.32 |
| Housing status | | |
| Not homeless | Ref.[a] | |
| Homeless | 2.80 | 2.28–3.44 |
| Primary Language | | |
| English | Ref.[a] | |
| Spanish | .78 | .63–.98 |
| Other | .40 | .12–1.38 |

*Note*
[a]Ref. indicates reference group.

be admitted for an alcohol-related disorder (AOR=15.48, 95%CI=10.74–22.32) and homeless patients were significantly more likely to be admitted for an alcohol-related disorder compared with housed patients (AOR=2.80, 95%CI=2.28–3.44). Age was also a significant predictor of admission for an alcohol-related disorder (AOR=1.02, 95%CI=1.0 –1.03). Patients with Spanish as a primary language were significantly less likely than those with English as a primary language to be admitted for an alcohol-related disorder (AOR=0.78, 95%CI=0.63–0.89).

## Discussion

This was an observational study investigating inpatient psychiatric admissions among Hispanic/Latino patients at an urban, safety-net hospital in Los Angeles. To our knowledge, this is the first study to assess the reasons for hospital admission among undocumented patients admitted for psychiatric conditions. Our results did not support our hypothesis that there would be a lower proportion of total psychiatric admissions among undocumented Hispanic/Latino patients. While there was no statistically significant difference in the proportion of total psychiatric admissions between undocumented and documented patients, we found interesting results after breaking down total admissions into various categories. Undocumented patients had 59% higher odds

of admission for alcohol-related disorders compared with documented counterparts. However, they had significantly lower proportional admissions for multiple psychiatric categories compared with documented patients.

That undocumented patients were more likely than their documented counterparts to be admitted for alcohol-related disorders was surprising based on the existing literature. Contrary to this finding, previous work has not found significantly different rates of alcohol use among undocumented and documented immigrants.[17,18] Immigrants as a group tend to decrease their alcohol frequency and quantity immediately after immigration, followed by an upward trend of alcohol intake with increased length of residency in the U.S.[19,20] However, one community study of Latinos in Miami-Dade County found that undocumented Latinos had 7.21 times the odds of binge drinking compared with their documented counterparts.[21] While alcohol use rates may not differ significantly, a higher incidence of binge drinking episodes may lead to increased incidence of severe intoxication or withdrawal episodes that necessitate acute care. Moreover, there could be greater willingness to use acute health care for these episodes. While there may be stigma against psychiatric symptoms, alcohol intoxication and withdrawal tend to manifest physically. Symptoms such as encephalopathy and tremors may be less stigmatized than psychiatric symptoms, mistaken for other diseases, or invoke a greater sense of urgency. This finding may also be a result of limited access to alcohol rehabilitation services due to lack of insurance, prohibitive costs, and immigration status. Given lower rates of health care use overall among undocumented immigrants, the higher proportion of hospitalization for alcohol-related disorders may reflect barriers to access and utilization of alcohol use resources among this population.[8]

Our finding that undocumented patients had lower proportional admissions for many psychiatric categories, including substance-related disorders, mood disorders, and anxiety disorders, was expected. Literature shows that undocumented immigrants generally have similar or lower prevalence of these disorders compared with their documented and U.S.-born counterparts.[7,8,22] Lower proportional admissions for suicide and intentional self-injury may also reflect lower incidence in the community. This might occur in the setting of protective factors and/or healthy coping mechanisms. For example, undocumented immigrants in the U.S. tend to live in geographic clusters, which may provide social network benefits that have protective mental health effects.[10,17,23,24] Notably, we did not find any existing research on delirium, dementia, and amnestic disorders among undocumented immigrants.

Another explanation for this finding is that undocumented immigrants are underusing acute mental health services compared with their documented counterparts. Existing research shows that among undocumented immigrants, there is a general trend toward lower use of health care services, including mental health services, seeing a physician, and visiting the ED.[7,8] Stigma is also a commonly cited barrier to mental health care among immigrants, and among undocumented immigrants, existing stigma may be complicated further by feelings of shame and discrimination when using health services in general.[18] Though our medical center does not ask about documentation status, patients and families may still be deterred from seeking care due to concerns about stigma and legal status.[10,12]

A caveat to the interpretation of our results is that Los Angeles County offers local

health care programs, such as My Health LA, that provide primary and preventive health care services.[25] These are valuable programs, as restricted-scope Medi-Cal does not cover outpatient services. Though not all undocumented patients are enrolled in such programs, some patients in our sample may be using these local programs. Those who are enrolled can access psychiatric medication prescriptions for mood disorders and substance use, social work services, and substance use counseling through the primary care setting.[25,26] We do not see this as a true limitation to our study but rather as an important policy implication on the possible benefits of providing health insurance, as our patients may be less reluctant overall to use necessary health care compared with those living in other regions.

One limitation of this study is that we are using insurance as a proxy for immigration status of patients. Patients who are uninsured on admission but qualify for any type of Medi-Cal are coded under Hospital Presumptive Eligibility; thus, this group includes both documented and undocumented patients. We did not include this group in our analysis, but we do not believe it would significantly affect our data, as the number of admissions meeting criteria in this category totals 31 (4.3% of total psychiatric admissions). Another limitation of this study is that our data lacked information on nativity status and length of residence in the U.S. Hispanics/Latinos are a large ethnic group from many different countries, with varying cultural beliefs, norms, and perceptions of mental health and practices. Among undocumented immigrants, there is variation in the immigration process, including age at immigration and variation in integration into their local environment, leading to differing levels of cultural stress. However, our control group was limited to one category of undocumented patients. We also acknowledge that there is an important sex/gender component that warrants further evaluation, as 94.6% of alcohol-related admissions were for male patients. However, the small number of women in the cohort precluded us from investigating any sex/gender-moderating effects.

Our study assesses the reasons for psychiatric admissions among undocumented patients and their documented counterparts. Contrary to our hypothesis, our study showed that there were no statistical differences in total psychiatric admissions between undocumented and documented patients. Undocumented patients were more likely to be admitted for alcohol-related disorders but less likely for substance-related disorders, mood disorders, anxiety disorders, and suicide and intentional self-inflicted injury, when compared to their documented counterparts. More research is generally needed to better understand the prevalence of psychiatric illness, as well as the severity of these of conditions, among undocumented immigrants in the community, particularly those with severe illnesses sufficient to qualify for inpatient admission. Future work should also investigate how variations in country of origin, English proficiency, immigration experience, and length of residency might affect use of acute mental health care.

The inpatient admission may be an important chance to identify patients who previously have not been connected to alcohol use treatment and resources. Future work should seek to ensure undocumented and documented patients alike who are admitted for an alcohol-use disorder have been seen by a social worker and referred to substance use counseling or outpatient rehabilitation. Future research should also seek to understand and address the barriers (such as access, awareness, or stigma) to

utilization of alcohol use-related resources among undocumented immigrants before and after hospitalization.

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