Race- and Sex-Based Differences in the Increase of Emergency Department Visits for Stimulant-Induced Psychotic Disorder in Kentucky

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Statistical analysis method: Negative binomial regression

Includes Kentucky residents presenting at any Kentucky hospital ED

ICD-10 indicators of interest: F15.15, F15.25, and F15.95

Despite anecdotal reports from treatment providers and people with a history of methamphetamine use,10,11 we currently lack systematic documentation of the growing burden of emergency department (ED) visits for stimulant-induced psychotic disorder (StIPD).

Methods

• Data source: Kentucky Outpatient Services Database Files, 2016–2021

• ICD-10 indicators of interest: F15.15, F15.25, and F15.95
  - Other Psychostimulant Use with Drug-Induced Psychotic Disorder
  - ICD-10 codes do not currently include codes specific to methamphetamine use

• Includes Kentucky residents presenting at any Kentucky hospital ED
  - Excludes patients of unknown sex, Hispanic ethnicity, or with a race listed other than Black or White (N=60)

• Statistical analysis method: Negative binomial regression model performed in R version 4.2.0

Results

Table 1 displays the results of the negative binomial regression model.

• The rate of ED visits for StIPD increased across all groups during the study period, with the reference group of White female residents having a 2.1% increase in the number of ED visits per month for StIPD (p<0.001).

• Compared to White female residents, Black male residents had a significantly higher rate of visits on average (IRR=2.630, p<0.001) and a significantly higher increase in visits per month across the study period (IRR=1.018 per month, p<0.001).

• While White male residents had a significantly higher average rate of visits (IRR=1.600, p<0.001) when compared to White female residents, there was not a significant difference in the increase per month over the study period (IRR=0.966 per month, p=0.18).

• Black female residents had no significant differences in the average rate of visits per month compared to White female residents (IRR=0.990, p=0.935) but had a significantly higher increase in visits per month (IRR=1.015 per month, p<0.01).

Conclusions

• StIPD is a growing challenge in Kentucky, with Black male residents experiencing the highest burden and the fastest growing rate of ED visits for StIPD.

• Prevention efforts can focus on training ED staff regarding resources available for patients who use stimulants and bridging the divide between treatment for substance use and severe mental health disorders.

• Future work should focus on validating the use of ICD-10 codes in the identification of StIPD-related encounters in an ED setting.

Figure 1: Black male Kentucky residents had the highest rate of ED visits for StIPD in 2021, with 68 visits per 100,000 residents. This was also the first year that the rate of ED visits for StIPD among Black female residents surpassed the rate for White residents, male and female (26 visits per 100,000 residents compared to 21 and 14 visits per 100,000 residents, respectively).

Table 1: Results of the negative binomial regression model assessing the monthly incidence rate ratio from January 2016 to December 2021, using White female residents as the reference group

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Incidence Rate Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>1.00 ***</td>
</tr>
<tr>
<td>Month-Year Ctr</td>
<td>0.999</td>
</tr>
<tr>
<td>Race-Sex [Black-F]</td>
<td>0.990</td>
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<tr>
<td>Race-Sex [Black-M]</td>
<td>2.630 **</td>
</tr>
<tr>
<td>Race-Sex [White-M]</td>
<td>1.000</td>
</tr>
<tr>
<td>Month-Year Ctr x Race-Sex [Black-F]</td>
<td>1.004 **</td>
</tr>
<tr>
<td>Month-Year Ctr x Race-Sex [White-M]</td>
<td>0.999</td>
</tr>
</tbody>
</table>

References

1. SAMHSA. Key Substance Use and Mental Health Indicators in the United States: Results from the 2020 National Survey on Drug Use and Health. 2021.

Disclaimers

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