Trends in Psychotropic Medication Use in the Noninstitutionalized Adolescent Population: An NHANES Analysis

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Objective

To examine trends and prevalence of psychotropic medication use among the US adolescent population
Background

• Psychotropic medication use can play a valuable role in adolescent treatment
• Most of the current work on psychotropic medication is based on in-patient high-risk adolescent populations: Bi-polar, suicidal, disabled
• Limited work on psychotropic drug use among non-clinical adolescent populations using NHANES
Data Source

National Health and Nutrition Examination Survey (NHANES)

• Multipurpose Health Survey Conducted by the NCHS, CDC

• NHANES can be used to examine psychotropic drug use patterns and trends

• Survey designed to be representative of the US civilian noninstitutionalized population using a complex, multistage probability sample

• Informed consent forms were obtained, and protocol was IRB approved by NCHS, CDC
Psychotropic Medications

• Prescription drug data collection similar in all NHANES cycles
• Household interview question:
  “Have you taken or used any medicines for which a doctors’ or dentist’s prescription is needed in the past 30 days?”
• Respondent who answered “Yes” – Further asked to report name, duration, and main reason for each product used
• Interviewer collected the exact product name-container.
  • If not available, respondent verbally reported information

Psychotropic Medication Classes

• Antidepressants
• Antipsychotics
• Anxiolytics/sedatives/hypnotics (ASH)
• Antimanics
• Attention Deficit Hyperactive Disorders (ADHD)
Methodology

- All analyses were weighted to the US civilian non-institutionalized population.
- Limited to the US adolescent population 12-17 years of age who completed household interview and prescription medication use.
- STATA 12.0 commands to account for the complex sample design
- Covariates
  - Sex: Male and Female
  - Race-Ethnicity: Non-Hispanic White, Non-Hispanic Black, and Mexican Americans
- Respondents may have multiple medications
- Univariate and bi-variate weighted prevalence analysis
- T-test comparison

<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>n’s</td>
<td>2,648</td>
<td>5,476</td>
<td>3,679</td>
</tr>
</tbody>
</table>

Source: CDC, NCHS National Health & Examination Nutrition Surveys

* Estimate does not meet standard for statistical reliability and precision (Relative Standard Error - RSE > 30%)
+ Estimate too low to report
Prevalence of Any Psychotropic Classes Use in the Past Month Among Adolescents 12-17 Years of Age in the US by Sex

Source: CDC, NCHS National Health & Examination Nutrition Surveys
* Estimate does not meet standard for statistical reliability and precision (Relative Standard Error -RSE > 30%)

Source: CDC, NCHS National Health & Examination Nutrition Surveys

* Estimate does not meet standard for statistical reliability and precision (Relative Standard Error - RSE > 30%)
Prevalence of Selected Psychotropic Classes Use In the Past Month Among Adolescents 12-17 Years of Age in the US by Sex 1988-1994, 1999-2004, 2005-2010

Percentage

Antidepressant  ADHD
Male  3.9  4.8  5.0
Female  0.6  0.3  0.4

Antidepressant  ADHD
Male  3.5  3.9  3.9
Female  1.7  2.8

Source: CDC, NCHS National Health & Examination Nutrition Surveys

• Estimate does not meet standard for statistical reliability and precision (Relative Standard Error -RSE > 30%)

• + Estimate too low to report
Prevalence of Selected Psychotropic Classes Use In the Past Month Among Adolescents 12-17 Years of Age in the US by Race-Ethnicity 1988-1994, 1999-2004, 2005-2010

Percentage

Source: CDC, NCHS National Health & Examination Nutrition Surveys

* Estimate does not meet standard for statistical reliability and precision (Relative Standard Error -RSE > 30%)

+ Estimate too low to report
Main Findings I - Trends 1988-2010

Overall
• Since 1988-1994 observe an estimated five-fold difference in ‘Any Psychotropic Classes Use’
  • Antidepressant - more than 6x difference
  • ADHD - more than 19x difference

Sex

<table>
<thead>
<tr>
<th>Boys</th>
<th>Girls</th>
</tr>
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<tbody>
<tr>
<td>Any Psychotropic Medication</td>
<td>7 times as high</td>
</tr>
<tr>
<td>Antidepressant</td>
<td>4 times as high</td>
</tr>
<tr>
<td>ADHD</td>
<td>16 times as high</td>
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<tr>
<td>Antidepressant</td>
<td>9 times as high</td>
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<tr>
<td>ADHD</td>
<td>28 times as high</td>
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</table>

Race-Ethnicity - Too unreliable to report (small n’s)
## Main Findings II:
### Current 2005-2010

<table>
<thead>
<tr>
<th>Overall</th>
<th>Any Psychotropic Medication</th>
<th>6.6%</th>
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<tbody>
<tr>
<td></td>
<td>Antidepressant</td>
<td>3.1%</td>
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<tr>
<td></td>
<td>ADHD</td>
<td>3.9%</td>
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</table>

<table>
<thead>
<tr>
<th>Boys</th>
<th>Any Psychotropic Medication</th>
<th>6.9%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Antidepressant</td>
<td>2.4%</td>
</tr>
<tr>
<td></td>
<td>ADHD</td>
<td>5.0%</td>
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</table>

<table>
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<tr>
<th>Girls</th>
<th>Any Psychotropic Medication</th>
<th>6.2%</th>
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<tr>
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<td>Antidepressant</td>
<td>3.9%</td>
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<tr>
<td></td>
<td>ADHD</td>
<td>2.8%</td>
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</table>
Main Findings II - Current 2005-2010

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<thead>
<tr>
<th>Race-Ethnicity</th>
<th>Any Psychotropic Medication</th>
<th>8.4%</th>
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<tbody>
<tr>
<td>NH-White</td>
<td>Antidepressant</td>
<td>4.7%</td>
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<td></td>
<td>ADHD</td>
<td>4.8%</td>
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</table>

<table>
<thead>
<tr>
<th>Race-Ethnicity</th>
<th>Any Psychotropic Medication</th>
<th>3.5%</th>
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<tbody>
<tr>
<td>NH-Black</td>
<td>Antidepressant</td>
<td>0.4%</td>
</tr>
<tr>
<td></td>
<td>ADHD</td>
<td>3.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Race-Ethnicity</th>
<th>Any Psychotropic Medication</th>
<th>3.1%</th>
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</thead>
<tbody>
<tr>
<td>Mexican-American</td>
<td>Antidepressant</td>
<td>0.9%</td>
</tr>
<tr>
<td></td>
<td>ADHD</td>
<td>2.1%</td>
</tr>
</tbody>
</table>
Conclusions

• 5 times as high in Any psychotropic use is driven by Antidepressants (6 times as high), and ADHD (19 times as high) prescription

• Observed higher prevalence of use for all race-ethnicities and both sexes

• Current (2005-2010)
  • Prevalence of Any psychotropic medication use (6.6%)
  • Boys- ADHD (5.0%) Antidepressant (2.4%)
  • Girls- Antidepressant (3.9%) ADHD (2.8%)
Strengths

- National representative sample of non-institutionalized population
- Oversampling minorities (Black, Mexican-Americans)
- Data collected by trained interviewers using in-person household interview protocol with verification of reported medication
Limitations

• Unreliable estimates (1988-1994)
• Conservative estimate
  • Does not cover some groups who are at higher risk of psychotropic medication use such as correctional facilities, and institutionalized population
• Respondents may choose not to disclose the use of psychotropic medication
• Only covered psychotropic medication - did not take into account non-prescription medications and herbal remedies with psychotropic qualities
• Prevalence of drug class, regardless of what the drug may have been taken for
Implications for future research

• Data support the importance of continued tracking for psychotropic medication use for noninstitutionalized adolescent populations
• NHANES is useful for monitoring current psychotropic medication use in adolescent populations
• More detailed studies to determine the cause of such trends and to better understand reasons for differences in current psychotropic medication use