Combined Energy Drink and Alcohol Use Predicts Illicit Stimulant Use
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Introduction

- Combined-use of alcohol and energy drinks (EDs) is an emerging public health issue.

- ED sales, worldwide, have increased from $3.5 billion in 2006 to over $6 billion in 2010.¹

- Red Bull remains the most popular ED in the US, with annual sales of $3.4 and $2.9 million in 2013 and 2014, respectively.

- Frequent release of new brands and aggressive advertising.²

- In 2010, the FDA banned pre-mixed alcoholic EDs such as “Four-Loko”

- Studies have demonstrated college students’ and young adults’ penchant for combining EDs and alcohol.²⁻⁴
Introduction

- Non-medical prescription (Rx) drug use is the 2nd most common form of illicit drug use.\(^5\)
- Recent research established a link between combined use of alcohol and energy drinks and illicit Rx stimulant use in college students.\(^6\)
- However, onset of alcohol and energy drink use typically occurs at a younger age.

Purpose

- To investigate the relationship between combined use (CU) of alcohol and EDs and illicit Rx drug use among middle and high school students in the US.
- We hypothesized CU students would be more likely to engage in illicit Rx stimulant drug use than those who used alcohol-only (AO).

Methods

- We used nationally representative data from the 2012 Monitoring the Future (MTF) study to assess 8th (N = 15,678), 10th (N = 15,428), and 12th (N = 2262) grade students’ ED, alcohol and Rx stimulant drug use patterns.
- Respondents who reported no alcohol use were excluded from analyses.
- Existing MTF energy drink and alcohol variables were recoded to create CU and AO variables
Methods

- 12-month alcohol and ED use variables were recoded as dichotomous variables (Yes = 1; No = 0). Students who responded “yes” to both items were considered CU.
- Reported 12-month Ritalin and Adderall use (ordinal variable) was used to determine illicit Rx stimulant use.
- Mann-Whitney U tests were used to determine statistical differences between CU and AO groups.

Results

- Students reported frequent ED use with 34%, 26%, and 64% of 8th, 10th, and 12th graders indicating drinking at least one ED a day, respectively.
- Approximately 5% and 10% of 12th graders reported illicit Ritalin and Adderall, respectively.
- Illicit Rx stimulant use rate for 8th and 12th graders ranged from 2-5% for Ritalin and Adderall.

<table>
<thead>
<tr>
<th>Results</th>
<th>Differences in Alcohol-Only and Combined Users Non-Medical Use of Prescription Stimulants*</th>
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</thead>
<tbody>
<tr>
<td>Grade 12</td>
<td>Ritalin Algebra only Combined</td>
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<td></td>
<td>773 1.50 0.450 .041 .25 .12</td>
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<tr>
<td>Adderall</td>
<td>571 1.19 0.807 .14</td>
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<tr>
<td>Grade 10</td>
<td>Ritalin Algebra only Combined</td>
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<td>1355 1.02 0.257 .001 .25 .12</td>
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<td>Adderall</td>
<td>846 1.15 0.704</td>
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<tr>
<td>Grade 8</td>
<td>Ritalin Algebra only Combined</td>
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<td></td>
<td>650 1.00 0.353 .001 .33 .16</td>
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<tr>
<td>Adderall</td>
<td>1081.20 1.427</td>
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</table>
Discussion

- Patterns of ED and alcohol use among high school students were similar to use patterns among college students.

- Illicit Rx stimulant use rates were greatest among 12th grade students, although rates were lower than those reported by college students.

- Similar to other studies, our findings suggest that students who combine alcohol and EDs are more likely to use Rx stimulant illicitly.7-8

Conclusions

- Research has established an ED-illicit Rx stimulant use link.

- Motivations for CU, however, are not well understood, and further investigation is needed.

- Prevention strategies, similar to those used in alcohol prevention programs (e.g. normative education, environmental strategies, policy) may be useful for CU prevention.

References