Behavioral Decisions and Emotional Trends Among College Students

Examining Frequent Alcohol Consumption and the Illness of Depression: A Comparison of Trends, Actions, and Emotions of Local and National University Populations

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Introduction

• Biochemical and behavioral factors associated with binge drinking among the undergraduate population.

• Biochemical and behavioral factors associated with the illness of major depression.

• The hypothesized correlation of alcohol and the illness of depression.
Specification of Binge Drinking

• The Centers for Disease Control’s National Center for Health Statistics defines heavy drinking as consuming five or more drinks on at least five occasions each month.

• Moderate drinking, as defined by the National Institute on Alcohol Abuse and Alcoholism, is the average number of drinks consumed daily that places an adult at low risk for alcohol problems.
Undergraduate Alcohol Consumption

• Specific behavioral patterns and an university environment fosters increased alcohol consumption.

• Undergraduate students consumption vs. young adults of the same age.
Undergraduate Binge-Drinking Rates: A Comparison of Studies

Harvard School of Public Health College Alcohol Study

• A survey of over 14,000 students at 120 four-year colleges in 40 states.

• The CAS examines key issues in college alcohol abuse.

• 2 out of 5 young adults in college binge on alcohol.

• Approximately 1 out of every 4 young adults in college drinks frequently, binging at least 3 times in 2 weeks.
Rates of binge drinking vary from 0% to 78% but have remained stable within colleges over time.

31% increase in the number of female binge drinkers in college from 1993 to 2001.
# Undergraduate Binge-Drinking Rates: A Comparison of Studies

## Southern Illinois University Core Institute

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>The % of students who reported using each drug listed at least once within the 30 days prior to completing the survey. N= 38,857</td>
<td>The % of students who reported using each drug listed at least once within the 30 days prior to completing the survey. N=68,000</td>
<td>The % of students who reported using each drug listed at least once within the 30 days prior to completing the survey. N= 33,379</td>
</tr>
<tr>
<td>Alcohol</td>
<td>74.7%</td>
<td>72.0%</td>
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</table>
Undergraduate Binge-Drinking Rates: A Comparison of Studies

University of Rochester American College Health Association National College Health Assessment

<table>
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<tr>
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<th>National Results 2004 N=24,804</th>
<th>ACHA-NCHA 2004 N=491</th>
<th>ACHA-NCHA 2005 N=448</th>
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<tbody>
<tr>
<td>Alcohol use</td>
<td>67%</td>
<td>74%</td>
<td>73%</td>
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<tr>
<td>Binge drinking (5 or more drinks)</td>
<td>36%</td>
<td>43%</td>
<td>33%</td>
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</table>
The Biological Metabolism of Alcohol

- Alcohol is an addictive depressant that slows the activity of the central nervous system.

- As alcohol is readily a hydrophobic, lipid-soluble substance, it easily passes through the capillary endothelial cell junctions of the blood-brain barrier.

- Alcohol is transported via the systemic system to the brain.
The Biological Metabolism of Alcohol

• N-methyl-D-aspartic acid (NMDA) receptors are a glutamate-gated, voltage gated ion channels permeable to sodium, potassium, and calcium.

• It is hypothesized that alcohol’s intoxicating effects are felt due to the inhibition of the NMDA receptor.

• Alcohol inhibits the flow of sodium across and expands the neuronal cell membrane, as well as blocks glutamate receptors, decreases serotonin activity and increases dopamine activity.

• Mechanism of popular sedatives may explain alcohol’s ability to lessen anxiety.
The Illness of Depression According to the DSM-IV-TR

A. Five (or more) of the following symptoms have been present during the same 2-week period and represent a change from previous functioning:
   1. Depressed mood most of the day, nearly every day.
   2. Markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day.
   3. Significant weight loss or weight gain or decrease or increase in appetite nearly every day.
   4. Insomnia or hypersomnia nearly every day.
   5. Psychomotor agitation or retardation nearly every day.
   6. Fatigue or loss of energy nearly every day.
   7. Feelings of worthlessness or excessive or inappropriate guilt nearly every day.
   8. Diminished ability to think or concentrate.
   9. Recurrent thoughts of death, recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide.
The Illness of Depression among Undergraduate Populations

• Incidence of students diagnosed with depression has increased by 4.6% over a four-year time span, from 2004 to 2007.

• 45% of students ages 18-24 reported being so depressed that they had difficulty functioning.

• 94% of undergraduate students reported feeling overwhelmed by everything they had to do.
The Illness of Depression among Undergraduate Populations

- 15-20% of the undergraduate population have been diagnosed with depression.

- Of the 14.9% of students who reported having ever been diagnosed with depression, 25.2% are currently in therapy for depression.

- 38% said they are currently taking medication for depression.

- Suicide is the second leading cause of death for individuals ages 18-24.
The Interaction of Alcohol and the Illness of Depression

• Alcohol alters the production and functioning of transmitters such as dopamine, serotonin, GABA, and endorphins.

• Higher rates of symptoms of depression and anxiety are found during periods of heavy drinking and may contribute to an increased risk of suicide or relapse.

• Alcohol itself is a depressant; a drug that enhances the overall inhibitory affect of GABA-ergic receptors in the nervous system.

• Combining alcohol with their symptoms and prescribed antidepressants is detrimental to the treatment and recovery from depression.
This research study examined the interconnectedness of binge-drinking and depression among the college population at the University of Rochester.

**HYPOTHESIS:** Increasing rates of binge drinking and diagnoses of depression among college students suggest a correlation between the effects of consistent binge drinking and the illness of depression. The continual consumption of five or more alcoholic beverages in one sitting, on at least 4-7 days within a 30 day period was hypothesized in this study to increase symptoms of depression and to detrimentally affect the recovery from depression once a diagnosis has been established.
Methods

• 13-page self administered questionnaire
  • Alcohol use, other substance use, current emotions, previously diagnosed medical conditions, and demographic information. BDI-II is a clinical tool used to determine the severity of depressive symptoms.

• Beck Depression Inventory - 2nd Edition
  • BDI-II is a clinical tool used to determine the severity of depressive symptoms.
  • Distributed information on UCC, UHS, and local and national suicide hotlines information.

• N= 260

• Beck’s score is the dependant variable.

• Binge drinking is the independent variable.
Results

N = 260
34% male / 66% female.
25% freshman  25% juniors
27% sophomores  23% seniors

Number of Days Consuming Alcohol

- Did not consume alcohol in the past 30 days: 25%
- Consumed alcohol on 10+ days: 26%
- Consumed alcohol on 8-10 days: 13%
- Consumed alcohol on 4-7 days: 27%
Results

• 17% of participants had scores indicative of symptoms of depression.

• 11% of the survey population had been diagnosed with depression.

• 16.2% of participants diagnosed with depression are still registering as severely depressed on the BDI-II scale.

• 14% of students who are experiencing symptoms of depression according to the Beck Depression Inventory-II scale have not been diagnosed with depression.

• 26% of those registering as depressed on the BDI-II scale report binge drinking in the past 30 days.

• 40% of those registering as depressed on the BDI-II scale report drinking on at least 4-7 days over the last 30 days.

• Only 13% of those with depressive symptoms as scored by the BDI-II engage in frequent binge drinking.
## Discussion

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<tbody>
<tr>
<td>Diagnosed depression</td>
<td>***</td>
<td>***</td>
<td>13%</td>
<td>14%</td>
<td>11%</td>
</tr>
<tr>
<td>Alcohol use</td>
<td>67%</td>
<td>72.8%</td>
<td>74%</td>
<td>75%</td>
<td>75%</td>
</tr>
<tr>
<td>Binge drinking</td>
<td>36%</td>
<td>***</td>
<td>43%</td>
<td>33%</td>
<td>33.8%</td>
</tr>
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</table>
Discussion

- 13% of those with depressive symptoms as scored by the BDI-II engage in frequent binge drinking.
- Those with the highest BDI-II scores (correlating to severe depressive symptoms) had not frequently binge drank in the past 30 days.
Discussion

• Logical biochemical interactions indicated a correlation between binge drinking and depression.
• Limitations in sample size
• A non-statistically significant correlation.
• A multitude of influencing factors.
  1. Avoidance of social situations and interactions
  2. Medical recommendations
  3. Multivariate factors influencing depression
Questions and Discussion
References


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