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Environmental and Personality Risk Factors for Drinking and Driving in Youth

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Introduction

- Drinking and driving is a significant health risk behavior, particularly for adolescents (Hingson & Winter, 2003).
- Studies of youth drinking and driving have identified individual difference factors that alter the likelihood youth will drive after drinking.
- Impulsivity and sensation seeking are related to drinking and driving behaviors in both youth and adults (Ryb et al., 2006; Jonah, 1997).
- Environmental factors such as parental monitoring and alcohol availability have also been shown to predict youth drinking and driving behaviors (Bingham & Shoppe, 2004).
- Very little is known about mechanisms by which personality characteristics and aspects of the environment might contribute to youth drinking and driving behaviors.
- We tested an integrated model of disinhibited personality traits and environmental influences on youth drinking and driving.
- We tested three alternative models:
  - Additive model: Personality and environment make unique contributions to drinking and driving behaviors.
  - Indirect effects model: The influence of disinhibited personality traits on drinking and driving is mediated by aspects of the adolescent's environment.
  - Moderation model: Disinhibited personality traits influence drinking and driving only for youth who are able to obtain alcohol or who have low parental monitoring.

Method

Participants

- Time 1: 266 high school students recruited from local high schools in Columbia, Missouri.
- Time 2: 76% (n = 202) of participants were followed-up approximately 8 months later.
- No differences were observed between study attritors and completers on gender, age, drinking and driving, and most alcohol use measures.

Measures

- Demographics.
- Alcohol Use. Past month quantity, frequency, and frequency of heavy drinking.
- Driving Behavior. Current driver’s license (yes/no), times unsupervised driving.
- Parental Monitoring. Youth self-reported rating of parental knowledge of youth behavior.
- Alcohol Availability. Youth perception of ease of obtaining alcohol.
- Sensation Seeking and Impulsivity. Assessed by the Zuckerman-Kuhlman Personality Questionnaire in true/false format.
- Drinking and driving behavior (DD). Past year (Time 1) and 3 month (Time 2) frequency.
- Riding with a drinking driver (RWDD). Past year (Time 1) and 3 month (Time 2) frequency.

Procedure

- Participants were recruited through fliers distributed at local high schools and posted in the community.
- Questionnaires, study information, and consent forms were mailed to participants.
- Participants were followed up 8 months later.
- Youth received a gift certificate for $20 for completion of each assessment.

Analytic Strategy

- Zero-inflated Poisson models were used for all analyses. These models separately consider two dependent variables:
  - Poisson Regression: dependent variable is a count variable for individuals able to assume values of zero and above.
  - Logistic Regression: a binary latent variable of whether the behavior is engaged in or not.
- Models were run separately for DD and RWDD.
- All analyses controlled for time 1 alcohol use, sex, and drinking and driving behaviors.

Results

- Preliminary analyses tested whether study variables predicted drinking and driving behaviors, over and above control variables.

<table>
<thead>
<tr>
<th></th>
<th>Drinking and Driving</th>
<th>Riding with a Drinking Driver</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>OR</td>
<td>PR</td>
</tr>
<tr>
<td><strong>Time 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensation Seeking</td>
<td>.70</td>
<td>2.34**</td>
</tr>
<tr>
<td>Impulsivity</td>
<td>.53</td>
<td>1.28**</td>
</tr>
<tr>
<td>Alcohol Availability</td>
<td>.22</td>
<td>11.27**</td>
</tr>
<tr>
<td>Parental Monitoring</td>
<td>1.48</td>
<td>2.87**</td>
</tr>
</tbody>
</table>

- Sensation seeking, alcohol availability, and parental monitoring were significantly associated with drinking and driving behaviors.

Discussion

- Disinhibited personality traits and environmental factors are unique influences on drinking and driving behaviors.
- Sensation seeking and impulsivity were stronger predictors of drinking and driving behaviors for youth who were able to obtain alcohol or who had low levels of parental monitoring.
- Differences were observed in what factors predicted driving and riding after drinking.
- Impulsivity was related to the decision to drink and drive, where as sensation seeking was related to riding with a drinking driver.
- Future studies could explore other potential mediators. For example, peer factors might mediate the influence of sensation seeking on riding with a drinking driver.