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Relationship between high school antisocial behavior and the GABRA2 gene as moderated by peer deviance

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**ABSTRACT**

Background: Children carrying certain variants of the GABRA2 gene have significantly higher rates of externalizing behaviors, especially when parental monitoring is low. The effect that GABRA2 may have on adult alcohol dependence has been widely studied. It has been suggested that GABRA2 may influence antisocial behavior and behavior problems in addition to alcohol use outcomes. This is believed to be the first study that looks at GABRA2 variation, antisocial behavior, and alcohol use among college students transitioning through emerging adulthood.

Objectives:
- Evaluate single nucleotide polymorphisms (SNPs) in GABRA2 for association with high school antisocial behavior.
- Test for moderation of the association between GABRA2 and antisocial behavior, as a function of peer deviance.

Hypotheses:
- GABRA2 will be associated with antisocial behavior.
- Individuals who carry the high risk genotype and have more deviant peers will have a higher sum score for antisocial behavior.

**METHODS**

**INTRODUCTION**

A sum score was calculated for each individual based on their reported frequency of antisocial behavior in high school (Figure 2). Linear regression analysis was performed using SPSS to investigate the relationship between genotype at these SNPs and an individual’s sum score. Covariates included gender, age, and ethnicity. Peer deviance was tested as a moderating variable using SPSS. A sum score was calculated for individuals based on their reported peer deviance in high school.

**RESULTS**

<table>
<thead>
<tr>
<th>SNP</th>
<th>Position</th>
<th>Beta value</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>rs116039536</td>
<td>46347931</td>
<td>0.008</td>
<td>0.797</td>
</tr>
<tr>
<td>rs65048</td>
<td>46345219</td>
<td>0.004</td>
<td>0.892</td>
</tr>
</tbody>
</table>

No significant association was found between our SNPs and high school antisocial behavior. Similarly, no significant findings were found for peer deviance as a moderating variable. We did find that the relationship between genotype and high school antisocial behavior differed by sex.

**CONCLUSIONS**

No significant association was found between our SNPs and high school antisocial behavior. Similarly, no significant findings were found for peer deviance as a moderating variable. We did find that the relationship between genotype and high school antisocial behavior differed by sex.

**LIMITATIONS**

The sample size was modest, and although the variation in antisocial behavior and genotype was present, we did not have enough data to support statistically significant results. Significant results may not have been expected since we are gathering results on a transitional phase of the lifespan.

**STRENGTHS**

This may be the first study to look at the effects of GABRA2 on antisocial behavior and alcohol use in college-aged individuals transitioning to adulthood and further analyses are warranted.

**REFERENCES**


**ACKNOWLEDGEMENTS**

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