Mediators of the relationship between depression and alcohol-related harm: The role of alexithymia, impulsivity and negative reinforcement outcome expectancies

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Mediators of the relationship between depression and alcohol-related harm: The role of alexithymia, impulsivity and negative reinforcement outcome expectancies

Andrew B. McGrath & Dennis McChargue Ph.D.

Introduction
- Alcohol use and abuse is prevalent in University Students, deeply ingrained the culture (White & Jackson, 2006)
- Between 14-27% of college students have depressive symptoms and 6.5-13.8% meet diagnostic criteria (Bayram & Bilgel, 2008)
- Substance use disorders are highly comorbid with mental disorders (Compton, Thomas, Stinson, & Grant, 2004)
- Alexithymia, the inability to identify and express emotion (Taylor, 2000), is more commonly found in substance users than a healthy sample (Thorberg, Young, Sullivan & Lyvers, 2009)
- Impulsivity has been found to be related to depression and substance use. Alcohol harm increases with depression despite consumption remaining the same (Simons, 2003)
- Negative expectancies have been related to alcohol problems (Leigh & Stacy, 1993; Leigh & Stacy, 2004)
- It is hypothesized that alexithymia, impulsivity, and negative expectancies will mediate the relationship between depression and alcohol harm

Method
- Participants were students from a large Midwestern university who broke the dry campus policy and were referred to an alcohol skills training program
- N=373, age 17-27 (M = 18.96, SD = 1.093), Male = 62.5%, the majority of the sample was white 90.5%, Hispanic 3.5%, African American 1.6%, Asian American 1.4%, Pacific Islander 0.3%, Native American 0.3%, and 2.4% identified as other/Multiracial
- The majority of the sample were freshman 63.7%, and single/never married 99.7%
- Depression was measured using the POMS, Alcohol Harm was measured using the RAPI and AUDIT, Alexithymia measured using the Toronto Alexithymia Scale-26, Impulsivity was measured using the Barrett Impulsiveness Scale (BIS), and negative expectancies were measured using the Comprehensive Effects of Alcohol Questionnaire

Results
- Bivariate Correlations

<table>
<thead>
<tr>
<th>RAPI and AUDIT Models</th>
<th>Dep</th>
<th>Alexithymia</th>
<th>Impulsiveness</th>
<th>Negative Expectancies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) RAPI</td>
<td>.34***</td>
<td>-.16**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) AUDIT</td>
<td>.31***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) POMS-Depression</td>
<td>.17**</td>
<td></td>
<td></td>
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<tr>
<td>4) Alexithymia</td>
<td>.04</td>
<td>.17**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5) Impulsiveness</td>
<td>.24**</td>
<td>-.11**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6) Negative Expectancies</td>
<td>.29**</td>
<td>.24**</td>
<td>.27**</td>
<td>.20**</td>
</tr>
</tbody>
</table>

- **p<.001 *p<.01

RAPI
- The multiple mediation model accounted for a significant portion of the variance in RAPI scores (R² = 0.09, p < 0.001). The α path from depression to alexithymia (B [SE] = 0.51 [0.16], p = 0.01, β = 0.21), impulsiveness (B [SE] = 0.50 [0.13], p = 0.01, β = 0.21), and negative expectancies (B [SE] = 0.62 [0.01], p = 0.01, β = 0.27) were statistically significant. The α path from negative expectancies (B [SE] = 3.22 [0.87], p = 0.01, β = 0.21) was significantly related to RAPI score; however, alexithymia (B [SE] = 0.03 [0.08], p = 0.62, β = 0.04) and impulsiveness (B [SE] = 0.01 [0.05], p = 0.37, β = 0.04) showed a non-significant association with RAPI score.
- Bias-corrected bootstrapping results (bootstrap sample n = 1000) for the indirect effects (αβ) revealed a non-significant indirect effect for alexithymia (αβ = 0.01, β = 0.04, 95% CI = 0.00 to 0.09) and impulsiveness (αβ = 0.00, β = 0.07, 95% CI = 0.00 to 0.10). Only negative expectancies showed a significant indirect path between depression and RAPI score (αβ = 0.09, β = 0.02, 95% CI = 0.02 to 0.12).
- The total association or effect of depression and RAPI scores (β path; B [SE] = 0.22 [0.07], p = 0.01, β = 0.29) was reduced when the mediational variables were accounted for in the model; however, a significant direct effect remained (β path; B [SE] = 0.17 [0.06], p = 0.05, β = 0.16). Thus, negative expectancies, but not alexithymia or impulsiveness, partially mediated the relationship between depression and RAPI score.

AUDIT
- The multiple mediation model accounted for a significant portion of the variance in AUDIT scores (R² = 0.13, p < 0.001). The α path from depression to alexithymia (B [SE] = 0.30 [0.09], p = 0.01, β = 0.34), impulsiveness (B [SE] = 0.20 [0.08], p = 0.01, β = 0.21), and negative expectancies (B [SE] = 0.22 [0.01], p = 0.01, β = 0.27) were statistically significant. The α path from negative expectancies (B [SE] = 2.40 [0.01], p = 0.01, β = 0.29) was significantly related to AUDIT score; however, alexithymia (B [SE] = 0.00 [0.03], p = 0.99, β = 0.09) and impulsiveness (B [SE] = 0.05 [0.01], p = 0.15, β = 0.10) showed a non-significant association with AUDIT score.
- Bias-corrected bootstrapping results (bootstrap sample n = 1000) for the indirect effects (αβ) revealed a non-significant indirect effect for alexithymia (αβ = 0.04, β = 0.26, 95% CI = 0.01 to 0.10) and impulsiveness (αβ = 0.00, β = 0.28, 95% CI = 0.00 to 0.07). Only negative expectancies showed a significant indirect path between depression and AUDIT score (αβ = 0.07, β = 0.01, 95% CI = 0.00 to 0.15).
- The total association or effect of depression and AUDIT scores (β path; B [SE] = 0.08 [0.05], p = 0.14, β = 0.11) remained nonsignificant when the other mediational variables were included in the model (β path; B [SE] = 0.02 [0.09], p = 0.78, β = 0.10). Thus, an indirect path between depression and AUDIT score was not present, negative expectancies, but not alexithymia or impulsiveness.

Discussion
- Overall, results provided partial support for the research hypotheses
- Only Negative expectancies partially mediated the relationship between depression and alcohol harm as measured by the RAPI
- Despite there not being a significant bivariate relationship between depression and AUDIT, negative expectancies mediated the relationship
- Alexithymia was not a significant contributor perhaps due the nature of Alexithymia by definition has trouble identifying emotion and thus is not aware of the urge to self medicate with alcohol
- Impulsivity as measured by the BIS did not capture negative urgency as a construct of impulsivity which has been found to mediate the relationship between Depression and Alcohol Harm

References
