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

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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

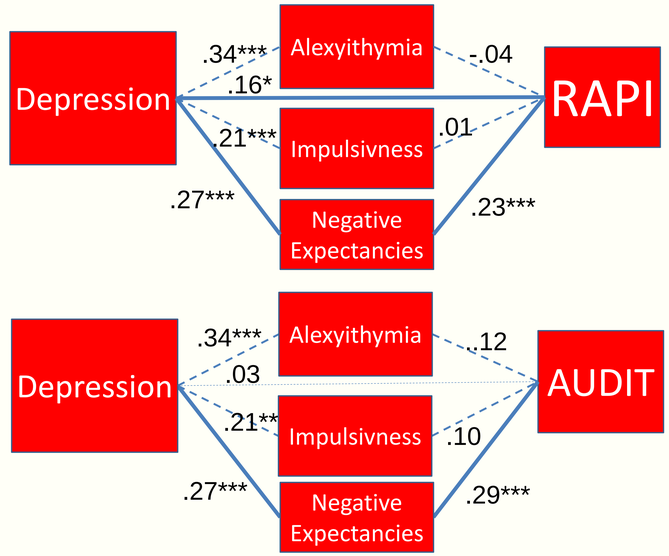
- Participants were students from a large Midwestern university who broke the dry campus policy and were referred to an alcohol skills training program
- N=373, age 17-27 (*M* = 18.96, *SD* = 1.093), Male = 62.5%,
- The majority of the sample was white 90.5%, Hispanic 3.5%, African American 1.6%, Asian 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 been 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

Bivariate Correlations

	1)	2)	3)	4)	5)
1) RAPI	---				
2) AUDIT	.709**	---			
3) POMS-Depression	.167*	.049	---		
4) Alexithymia	.064	.199**	.343**	---	
5) Impulsiveness	.087	.219**	.207**	.208*	---
6) Negative Expectancies	.298**	.245**	.272**	.200*	.077

**p<.001 *p<.01

RAPI and AUDIT Models



References

Bayram, N., & Bilgel, N. (2008). The prevalence and socio-demographic correlations of depression, anxiety and stress among a group of university students. *Social Psychiatry and Psychiatric Epidemiology*, *43*(8), 667–672. http://doi.org/10.1007/s00127-008-0345-x

Grant, B. F., Stinson, F. S., Dawson, D. A., Chou, S. P., Dufour, M. C., Compton, W., … Kaplan, K. (2004). Prevalence and Co-Occurrence of Substance Use Disorders and Independent Mood and Anxiety Disorders on Alcohol and Related Conditions. *Archives of General Psychiatry*, *61*(2), 807–816.

Leigh, B. C., & Stacy, A. W. (1993). Alcohol outcome expectancies: Scale construction and predictive utility in higher order confirmatory models. *Psychological Assessment*, *5*(2), 216–229. http://doi.org/10.1037/1040-3590.5.2.216

Leigh, B., & Stacy, A. (2004). Alcohol expectancies and drinking in different age groups. *Addiction*, *99*, 215–227. http://doi.org/10.1046/j.1360-0443.2004.00641.x

Simons, J. S. (2003). Differential prediction of alcohol use and problems: the role of biopsychological and social-environmental variables. *Am.J.Drug Alcohol Abuse*, *29*(4), 861–879. http://doi.org/10.1081/ADA-120026265

Taylor, G.J., Ryan, D., & Bagby, R.M. (1985). Toward the development of a new self-report alexithymia scale. Psychotherapy & Psychosomatics, 44, 191–199.

Thorberg, F. A., Young, R. M., Sullivan, K. A., & Lyvers, M. (2009). Alexithymia and alcohol use disorders: A critical review. *Addictive Behaviors*, *34*(3), 237–245. http://doi.org/10.1016/j.addbeh.2008.10.016

White, H. R., & Jackson, K. (2004). Social and psychological influences on emerging adult drinking behavior. *Alcohol Research & Health*, *28*(4), 182–190. Retrieved from http://psycnet.apa.org/psycinfo/2006-01535-002

Results

RAPI

- The multiple mediation model accounted for a significant portion of the variance in RAPI scores ($R2 = 0.09$, $p < 0.001$). The *a* paths from depression to alexithymia (B [SE] = 0.51 [0.16], $p < 0.01$, $\beta = 0.34$), impulsiveness (B [SE] = 0.30 [0.13], $p < 0.01$, $\beta = 0.21$), and negative expectancies (B [SE] = 0.02 [0.01], $p < 0.01$, $\beta = 0.27$) were statistically significant. The *b* path from negative expectancies (B [SE] = 3.22 [0.87], $p < 0.01$, $\beta = 0.23$) was significantly related to RAPI score; however, alexithymia (B [SE] = -0.03 [0.08], p = 0.62, $\beta = -0.04$) and impulsiveness (B [SE] = 0.01 [0.05], p = 0.87, $\beta = 0.01$) showed a non-significant association with RAPI score.
- Bias-corrected bootstrap results (bootstrap samples = 1000) for the indirect effects (*ab*) revealed a nonsignificant indirect effect for alexithymia (z = -0.01, *p* = 0.63, 95% C.I. = -0.10 to 0.06) and impulsiveness (z = 0.00, *p* = 0.87, 95% C.I. = -0.04 to 0.04). Only negative expectancies showed a significant indirect path between depression and RAPI score (*z* = 0.06, *p* = 0.02, 95% C.I. = 0.02 to 0.12).
- The total association or effect of depression and RAPI scores (*c* path; *B* [SE] = 0.22 [0.07], $p < 0.01$, $\beta = 0.20$) was reduced when the mediational variables were accounted for in the model, however a significant direct effect remained (*c'* path; *B* [SE] = 0.17 [0.08], $p < 0.05$, $\beta = 0.16$). 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 *a* paths from depression to alexithymia (B [SE] = 0.52 [0.09], $p < 0.001$, $\beta = 0.34$), impulsiveness (B [SE] = 0.28 [0.08], $p < 0.001$, $\beta = 0.21$), and negative expectancies (B [SE] = 0.02 [0.01], $p < 0.01$, $\beta = 0.27$) were statistically significant. The *b* path from negative expectancies (B [SE] = 2.49 [0.61], $p < 0.001$, $\beta = 0.29$) was significantly related to AUDIT score; however, alexithymia (B [SE] = 0.6 [0.03], p = 0.09, $\beta = 0.12$) and impulsiveness (B [SE] = 0.05 [0.03], p = 0.15, $\beta = 0.10$) showed a non-significant association with AUDIT score.
- Bias-corrected bootstrap results (bootstrap samples = 1000) for the indirect effects (ab) revealed a nonsignificant indirect effect for alexithymia (z = 0.04, p = 0.24, 95% C.I. = -0.01 to 0.10) and impulsiveness (z = 0.00, p = 0.28, 95% C.I. = -0.01 to 0.07). Only negative expectancies showed a significant indirect path between depression and AUDIT score (z = 0.07, p < 0.01, 95% C.I. = 0.03 to 0.13).
- The total association or effect of depression and AUDIT scores (c path; B [SE] = 0.08 [0.05], p = 0.14, $\beta = 0.11$) remained nonsignificant when the other mediational variables were included in the model (c' path; B [SE] = -0.02 [0.05], p = 0.70, $\beta = -0.03$). Thus, an indirect path between depression and AUDIT score exist via 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