

An Epidemiological Study of the Selection and Use of Alcohol and Marijuana among Undergraduates Who Self-Report Symptoms of Depression, Anxiety and Stress.

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Abstract

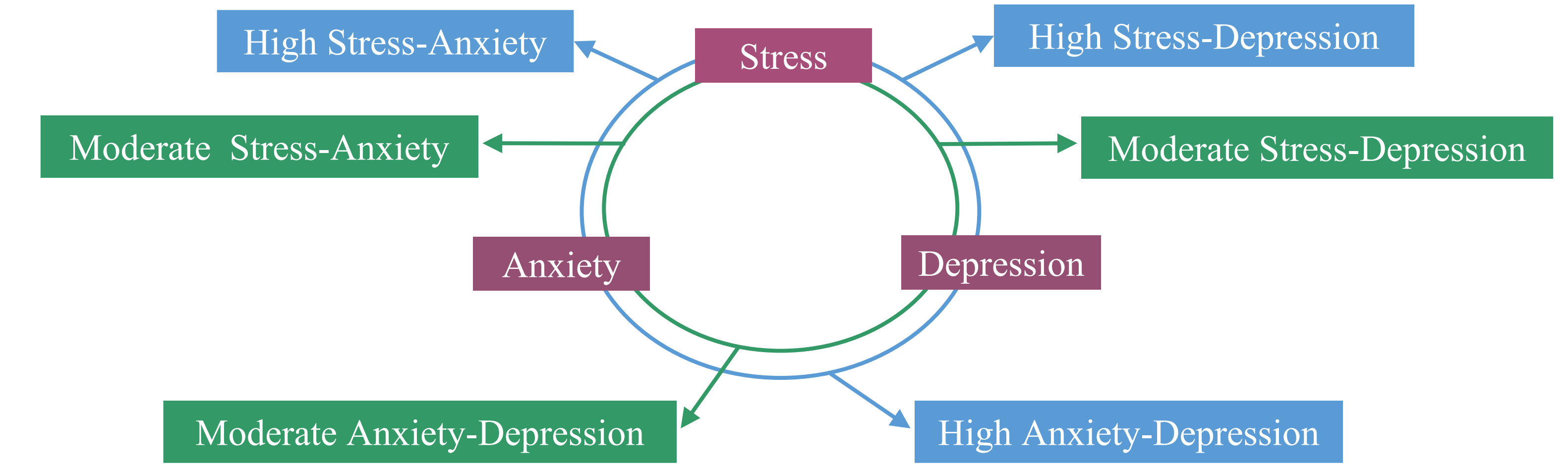
This study confirms changes in perceived stress and comorbid stress-anxiety and stress-depression are associated with increased alcohol use among emerging adults. A diverse sample of undergraduates from an urban university completed self-reported inventories for stress, anxiety and depression, and alcohol and marijuana use. The associations of sole and comorbid mental health issues with alcohol and marijuana use were investigated. Results indicate that increased stress from low to high significantly predicted increased alcohol use. Moreover, increased stress-anxiety and stress-depression from low to moderate also predicted increased alcohol use. No association was found with marijuana and mental health issues.

Background

- The relationship between stress, anxiety and depression with alcohol and drug use is well-documented (Csiernik, 2014; Devane, *et al*, 2005; Grant, *et al*, 2006).
- Research investigates the likelihood of certain substances, both legal and illegal, being regularly used by individuals with specific levels of anxiety and mood disorders (Bergdahl, *et al*, 2002; Csiernik, 2014; Keith, *et al*, 2015; Peltzer, *et al*, 2015).
- However, there is a paucity of research examining the association of alcohol and marijuana use with the presence of comorbid levels of stress, anxiety, and depression.

Objectives

- To determine whether alcohol and marijuana have any association with increasing comorbid levels of stress, anxiety and depression.

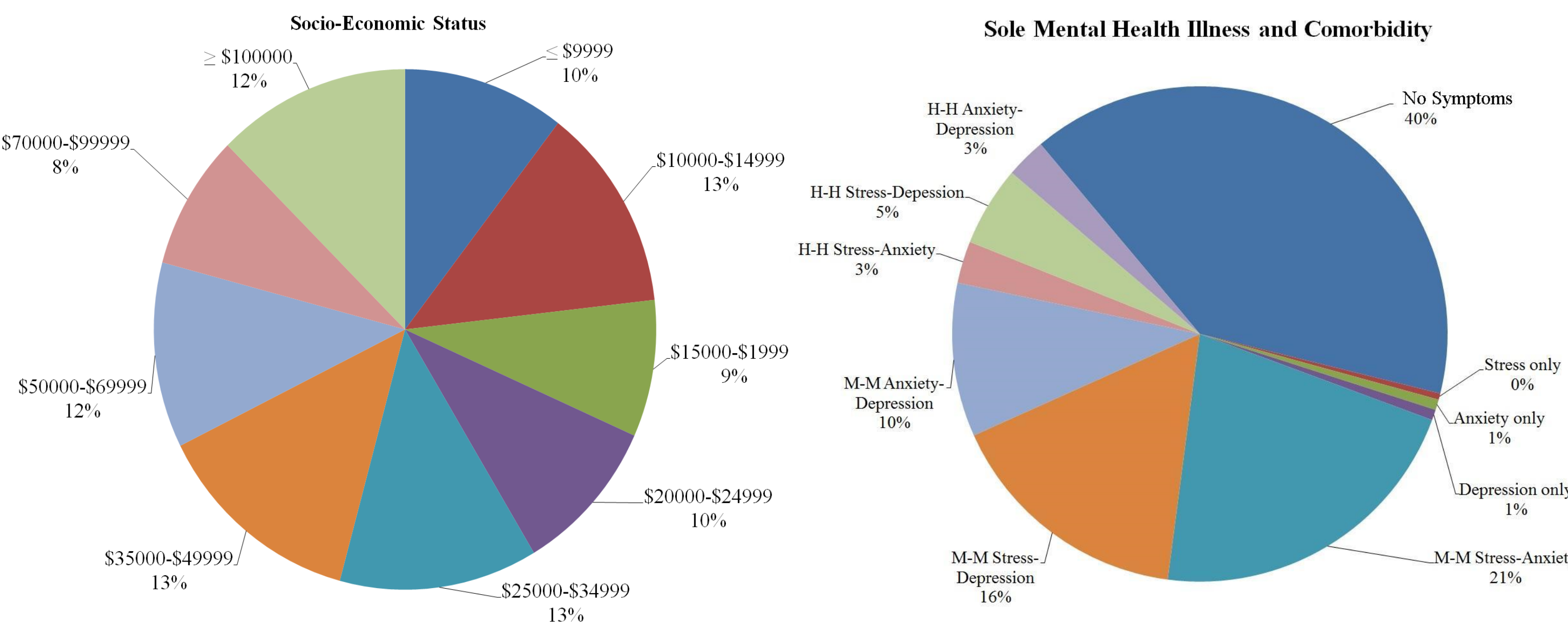


Measures

- Perceived Stress Scale (PSS)** measures general stress perceived during the past month, which can predict objective biological markers of stress and risk for diseases (Cohen, S., *et al* 1988). *Cronbach's α* = 0.79.
- State and Trait Anxiety Inventory-Trait Form (STAI)** ascertains the levels of generalized (trait) anxiety—the relatively stable individual differences in anxiety-proneness (Spielberger, C. D., *et al.*, 1983). The subscale is heavily loaded on the anxiety factor and excluded items loaded on depressive symptoms. *Cronbach's α* = 0.84
- Center for Epidemiologic Studies Depression Scale (CESD-S)** assesses the presence and level of depressive symptoms that occurred over the past week (Radloff, L. S., 1977). *Cronbach's α* = 0.79.
- Drug Use Frequency Measure** assesses use of alcohol, marijuana, amphetamine, tranquilizers, barbiturates, synthetics (e.g. methadone and meperidine), opioids, and pharmaceutical narcotics (e.g. codeine and paregoric) (O'Malley, P. M., *et al*, 1984). Only items on alcohol and marijuana were examined. Frequency is measured on a Likert scale of (1) never, (2) once or twice, (3) several times a month, (4) several times a week, and (5) daily.

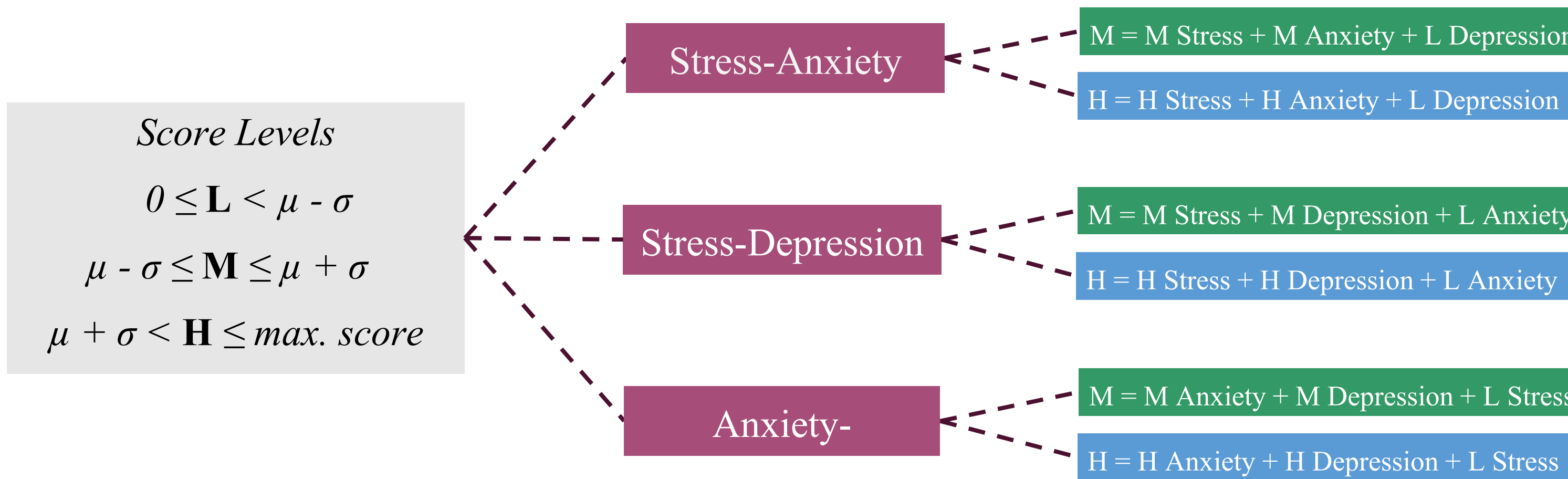
Study and Sample

- n = 1,099 emerging adults
- 63.7% Females; Mean age = 19.92 (σ = 2.13)
- 94.1% did not seek professional help for mental health issues
- Both STAI and CESD-S correlated significantly at a significance level of 0.01 with PSS, 0.67 and 0.64 respectively.



Method

- Comorbidities were determined by the sample's mean scores and standard deviations to create three score levels: Low (L), Moderate (M), and High (H).



- Alcohol and marijuana use were dichotomized based on frequency.



Results: Perceived Stress predicted alcohol use

Table 1: Binary logistic regression predictions of the odds of alcohol and marijuana use due to changes in stress, anxiety and depression. (*see Note below.*)

Variables	Alcohol		Marijuana	
	OR	95% C.I.	OR	95% C.I.
Perceived Stress (L vs M)	1.79	0.81 – 4.00	1.10	0.30 – 4.11
Perceived Stress (L vs H)	2.01*	1.11 – 3.63	1.30	0.49 – 3.45
Anxiety (L vs M)	1.18	0.58 – 2.37	1.67	0.42 – 5.10
Anxiety (L vs H)	1.16	0.75 – 1.79	1.50	0.68 – 3.31
Depression (L vs M)	0.91	0.48 – 1.72	1.19	0.43 – 3.29
Depression (L vs H)	0.91	0.60 – 1.39	0.73	0.35 – 1.52

Results: L to M Stress-Anxiety and Stress-Depression predicted alcohol use

Table 2: Binary logistic regression predictions of the odds of alcohol and marijuana use due to changes in stress-anxiety, stress-depression, and anxiety-depression.

Variables	Alcohol		Marijuana	
	OR	95% C.I.	OR	95% C.I.
Stress-Anxiety (L vs M)	2.37*	1.37 – 4.11	0.86	0.29 – 2.55
Stress-Anxiety (L vs H)	1.75	0.48 – 6.39	1.49	0.18 – 12.3
Stress-Depression (L vs M)	2.25*	1.19 – 4.25	1.14	0.35 – 3.72
Stress-Depression (L vs H)	1.00	0.29 – 3.51	0.94	0.23 – 1.32
Anxiety-Depression (L vs M)	1.70	0.54 – 5.29	1.07	0.13 – 8.72
Anxiety-Depression (L vs H)	1.87	0.51 – 6.86	1.58	0.19 – 13.0

*Note: OR, odds ratio; C.I., confidence interval. Regressions were run separately for alcohol and marijuana. The reference category is Low score levels. *Statistically significant, p < 0.05.*

Findings & Conclusions

- The analyses suggest changes in stress scores from low to high significantly predicts alcohol use. Individuals with high stress are 2.01 times more likely to use alcohol than those with low stress.
- The presence of increased stress-anxiety from low to moderate predicts the use of alcohol. Individuals with moderate stress-anxiety levels are 2.37 times more likely to use alcohol than those with low stress-anxiety.
- Increasing stress-depression from low to moderate was significantly associated with alcohol use. Individuals with moderate stress-anxiety are 2.25 times more likely to use alcohol than those with low stress-depression.
- No changes in sole and comorbid mental illnesses were significantly associated with the use of marijuana, ($p > 0.05$).
- Conclusion:** Changes in comorbid stress-anxiety and stress-depression are the mental health issues associated with the increased use of alcohol among emerging adults. Overall, this study further confirms the significant association of increased level of perceived stress and increased alcohol use.

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