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2021

Alcohol and E-Cigarette Simultaneous Use: The Role of Motivations and Expectancies

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Recommended Citation

Walsh, Brendan; Shaw, Michael; Shayya, Ashley; and Williams, Callon, "Alcohol and E-Cigarette Simultaneous Use: The Role of Motivations and Expectancies" (2021). *Research Days Posters 2021*. 17. https://orb.binghamton.edu/research_days_posters_2021/17

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BACKGROUND AND PURPOSE

- Alcohol and e-cigarette use are especially prevalent among young adults.^{1,2}
- Drinkers are more likely to use tobacco products and tobacco users are more likely to use alcohol.³
- Research indicates people report increased pleasure while engaging in simultaneous use of these substances, likely exacerbating the use of both.^{6,8}
- Expectancies for combined alcohol and e-cigarette use are linked to problematic alcohol use.⁶ The purpose of this study was to examine variations in expectancies, relative pleasure, frequency, and nicotine dependence as a function of alcohol use.

METHOD

Participants

- Young adults (18-25; N=408) who reported both alcohol and e-cigarette use in the past 3 months completed a survey via Amazon MTurk

Measures

- Alcohol Use:** Alcohol Use Disorders Identification Test-Concise (AUDIT-C)¹¹
- Expectancies of Simultaneous Use:** Nicotine and Other Substances Interaction Expectancy Questionnaire (E-Cig Revised) yields two scales representing expectancies that alcohol (NOSIE-ER 1) and e-cigarettes (NOSIE-ER 2) precede simultaneous use⁵
- Nicotine Dependence:** Penn State [Electronic] Cigarette Dependence Index¹²
- Relative Pleasure and Frequency of Simultaneous Use:** Two Likert-type items examine pleasure from and percentage of e-cigarette/alcohol simultaneous use¹³

Data Analytic Strategy

- Separate linear regression models were conducted with AUDIT-C and Simultaneous Use Percentage entered as the independent variables and NOSIE-ER 1, NOSIE-ER 2, and pleasure entered as the dependent variables, respectively
- Level of nicotine dependence,⁵ age, ethnicity, and college status were controlled for in all analyses
- Squared semi-partial correlations indicated the unique variance accounted for by each independent variable

RESULTS

Sample Characteristics

- $M_{Age} = 23.64$ (SD = 1.64), 52.7% women, 59% currently enrolled in college
- 30% of AUDIT-C scores were ≥ 7 , which is likely indicative of hazardous drinking¹⁰
- On average, participants reported a "strong increase" in pleasure from e-cigarettes while drinking ($M=3.73$, $SD=.97$)

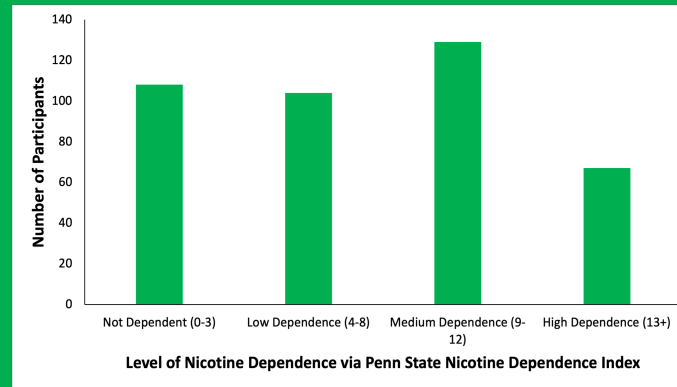


Figure 1. Frequency Distribution of Nicotine Dependence; 73.5% were classified as e-cigarette dependent ($M=7.5$, $SD=4.8$).

Regression Models

- Alcohol Use was significantly associated with NOSIE-ER 1 ($B=.1$, $p<.003$, $sr^2=.017$), NOSIE-ER 2 ($B=.078$, $p<.001$, $sr^2=.027$), and greater pleasure during simultaneous use ($B=.046$, $p<.036$, $sr^2=.011$).
- Percentage of simultaneous use was associated with NOSIE-ER 1 ($B=.020$, $p<.001$, $sr^2=.114$), NOSIE-ER 2 ($B=.009$, $p<.001$, $sr^2=.060$), and pleasure during simultaneous use ($B=.011$, $p<.001$, $sr^2=.108$).

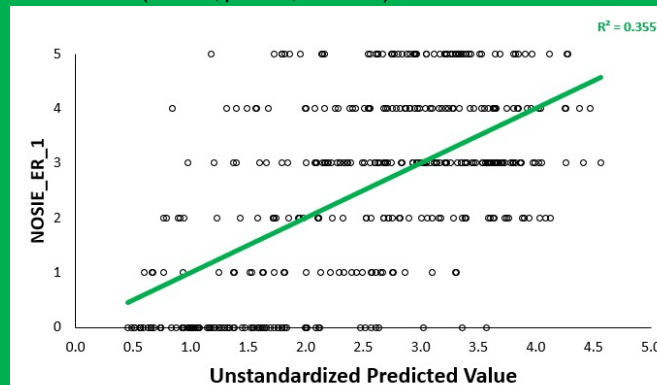


Figure 2. Scatter plot depicting multiple regression model testing simultaneous use as a predictor of NOSIE-ER-1.

CONCLUSIONS

- Findings indicate that as young adults engage in more frequent simultaneous alcohol/e-cigarette use, they report greater expectancies and pleasure from that behavior.
- As alcohol use increased, young adults reported greater expectancies for e-cigarette use while drinking.
- Percentage of simultaneous use accounted for more variance in NOSIE-ER 1 vs. NOSIE-ER 2 scores, suggesting that young adults may be more likely to use e-cigarettes during acute bouts of alcohol consumption (vs. drinking alcohol during e-cigarette use).
- Future research should study these relations with experimental methods capable of determining causal relationships.
- Clinicians should consider the utility of integrated interventions for alcohol and e-cigarette use, which address use of both substances together.

MAIN TAKEAWAY

Nearly half of young adult e-cigarette users were moderately-highly dependent on nicotine. Those who reported more frequent simultaneous alcohol/e-cigarette use also reported greater expectancies and pleasure for that behavior. Results are consistent with the notion that alcohol and nicotine together may heighten use of both substances over time.

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