**ABSTRACT**

**Background:** Although the relationship between cigarette smoking, mental health symptoms, and other substance use (i.e., alcohol and marijuana) is well established, there is less research focused on mental health symptoms among individuals who use more than one tobacco product, especially those who use non-cigarette tobacco products. We explored the associations between mental health symptoms and use of non-cigarette tobacco products (i.e., e-cigarette and hookah dual use) and substance use and use of non-cigarette tobacco products among young adults. **Methods:** Participants were 240 young adults who participated in an observational study on examining how, when and where people use these tobacco products and young adults’ subjective experiences with those products. Participants completed baseline questionnaires assessing tobacco use and history, (b) nicotine dependence, (c) other alcohol and substance use, (d) perceptions of harm from product use, (e) tobacco marketing exposures, and (f) a variety of psychosocial measures, including mental health symptoms. **Results:** Analysis of Variance (ANOVA) analyses showed that tobacco use groups differed significantly on ADHD symptoms, *F*(3, 236) = 2.80, *p* = 0.04, η2*g* = 0.03. Pairwise comparisons indicated that the mean score of ADHD among individuals who use e-cigarettes was higher than that of individuals who use hookah. Additionally, groups significantly differed on cannabis use, *F*(3, 236) = 2.72, *p* = 0.045, η2*g* = 0.03, on alcohol related problems, *F*(3, 236) = 4.31, *p* = 0.006, η2*g* = 0.05, and cannabis dependance *F*(3, 236) = 3.28, *p* = 0.022, η2*g* = 0.04. Pairwise comparisons indicated that the mean score of cannabis use and cannabis dependance, was higher among the cigarette plus group than the dual e-cigarette and hookah group, and alcohol dependance was higher among the cigarette plus group than the hookah only group. **Conclusion:** This study found that young adults who used cigarettes plus another tobacco product had higher levels of substance use and substance use related problems, while those who used e-cigarettes had higher self-reported ADHD symptoms.