



Race and Anxiety Sensitivity as Predictors of E-Cigarette Dependency



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Introduction

BACKGROUND:

- The dramatic increase in e-cigarette use over the past decade (Creamer et al., 2019) has drawn attention of public health officials (SAMSHA, 2020).
- Preliminary findings show that minorities have lower odds of e-cigarette use than Whites (Hooper & Kolar, 2016; Pericot-Valverde et al., 2017); whereas research in college populations has not found a relation between e-cigarette use and race/ethnicity (Hooper & Kolar, 2016). Further, very few studies have investigated e-cigarette dependency in relation to racial/ethnic background.
- Higher anxiety sensitivity (AS) has been linked with more severe patterns of e-cigarette use (Zvolensky et al., 2019).
- Previous research suggests that minority groups, due to a number of adversities, are at higher risk of developing and maintaining anxiety disorders, which increases risk for addiction (see Zvolensky et al., 2017 for review).

STUDY AIM AND HYPOTHESIS:

AIM: The current study was conducted to assess the effects of race/ethnicity and anxiety sensitivity on e-cigarette dependence.

HYPOTHESES:

- Racial/ethnic minorities will exhibit higher levels of dependence and AS compared to their White counterparts.
- AS will mediate the relation between racial/ethnic background and e-cigarette dependence.

Method

PARTICIPANTS & PROCEDURE:

- Individuals ($N = 247$) who reported past 6-month e-cigarette use were recruited through Amazon's Mechanical Turk (MTurk) and participated in an online self-report study in exchange for monetary compensation.
- The sample (40.9% female; $M_{age} = 36.1$) comprised individuals of diverse ethnic/racial backgrounds, with 59.9% identifying as White, 18.6% Black, 8.5% Asian, 4.9% American Indian/Alaskan, 3.6% Biracial, 2.0% Latinx, and 1.2% Multiracial.

MEASURES:

- E-cigarette Use Questionnaire: This self-report questionnaire assessed e-cigarette use characteristics such as onset, past 30-day use, and quit attempts.
- Penn State Electronic Cigarette Dependence Index (Foulds et al., 2015): This 10-item self-report questionnaire was used to assess e-cigarette dependence.
- Anxiety Sensitivity Index-3 (Taylor et al., 2007): This 18-item self-report questionnaire assessed cognitive, social, and physical aspects of AS.

ANALYSES

- A series of independent t -tests were conducted to test Hypothesis 1.
- To test Hypothesis 2, the PROCESS macro (Hayes, 2018) was used to estimate the indirect effect through bootstrapping with 10,000 resamples with a 95% confidence interval. In this model, predictor = Race (0 = White; 1 = Minority); Mediator = AS; and Outcome = e-cigarette dependence.

Results

- 13% of the sample reported high e-cigarette dependency (see Figure 1); however, similar rates of dependency were observed with regard to racial/ethnic background.
- Racial/ethnic minority participants reported significantly greater anxiety sensitivity ($t [240] = 2.66, p = .008$; Figure 2), but not e-cigarette dependence ($t [240] = 1.91, p = .057$; Figure 3).
- Although the total effect model was not significant, a significant indirect effect of AS on the relation between White vs. minority status and e-cigarette dependence was observed (see Figure 4).

FIGURE 1. E-CIG DEPENDENCY LEVEL

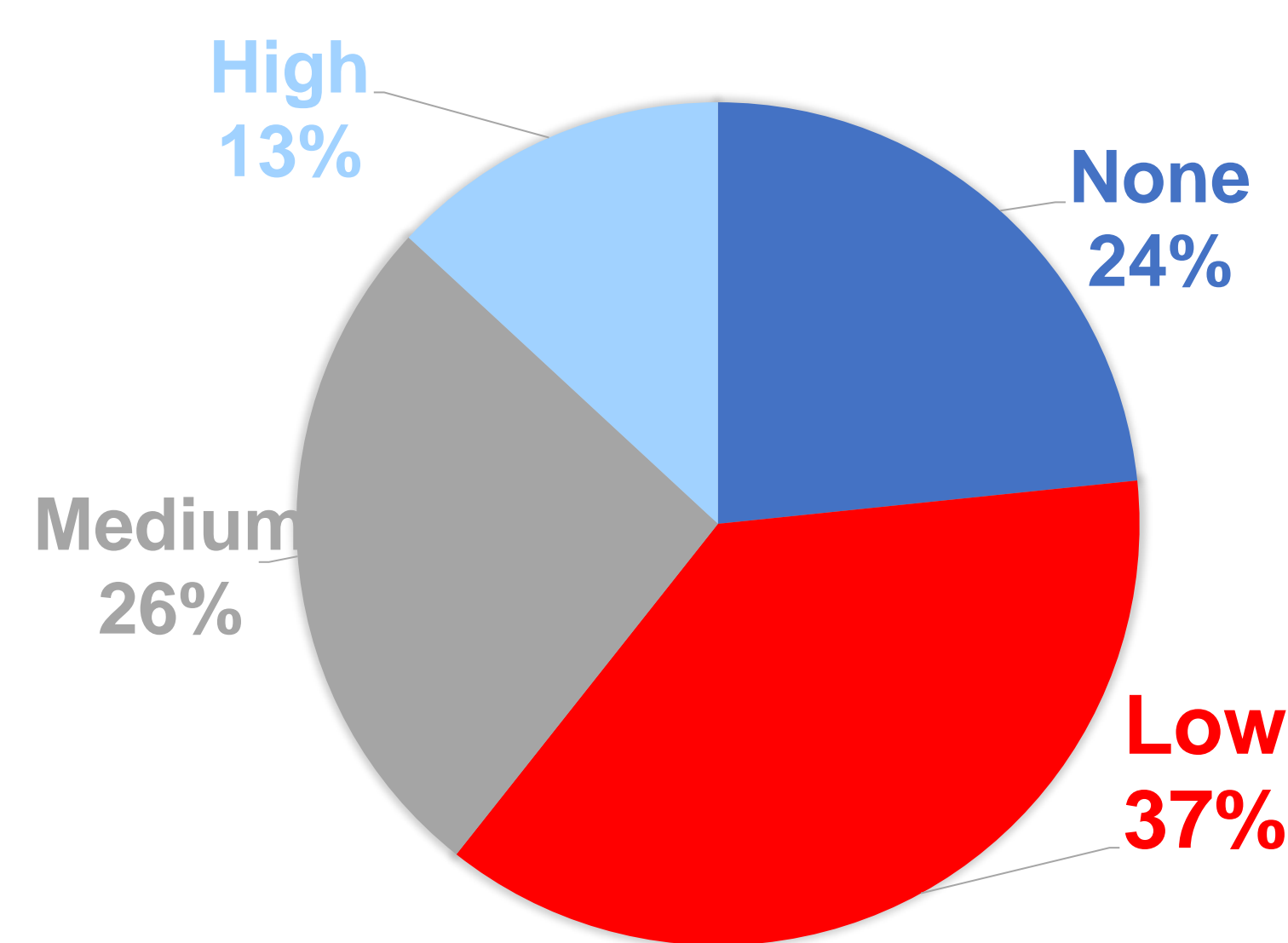


Figure 2. Anxiety Sensitivity

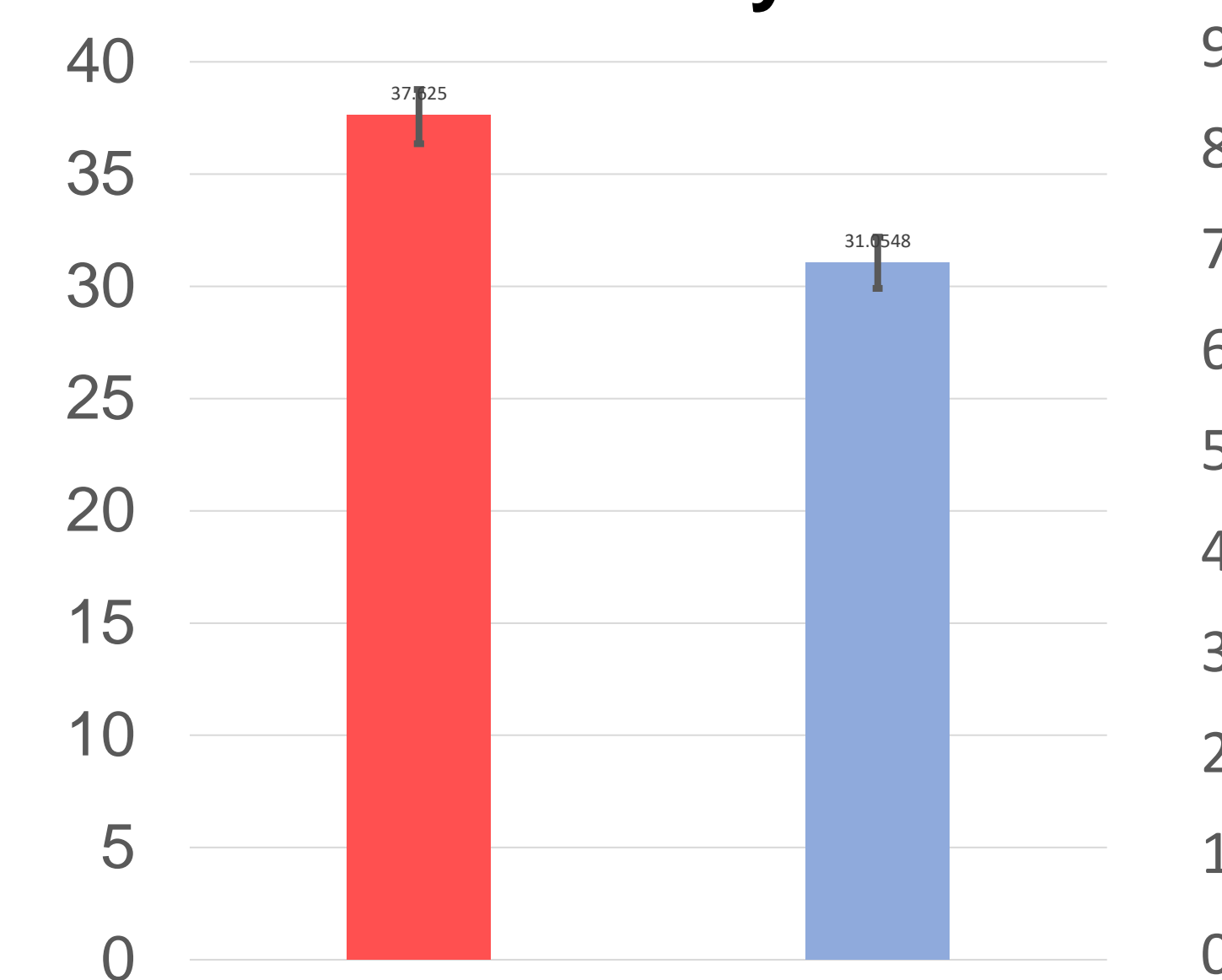


Figure 3. Dependence

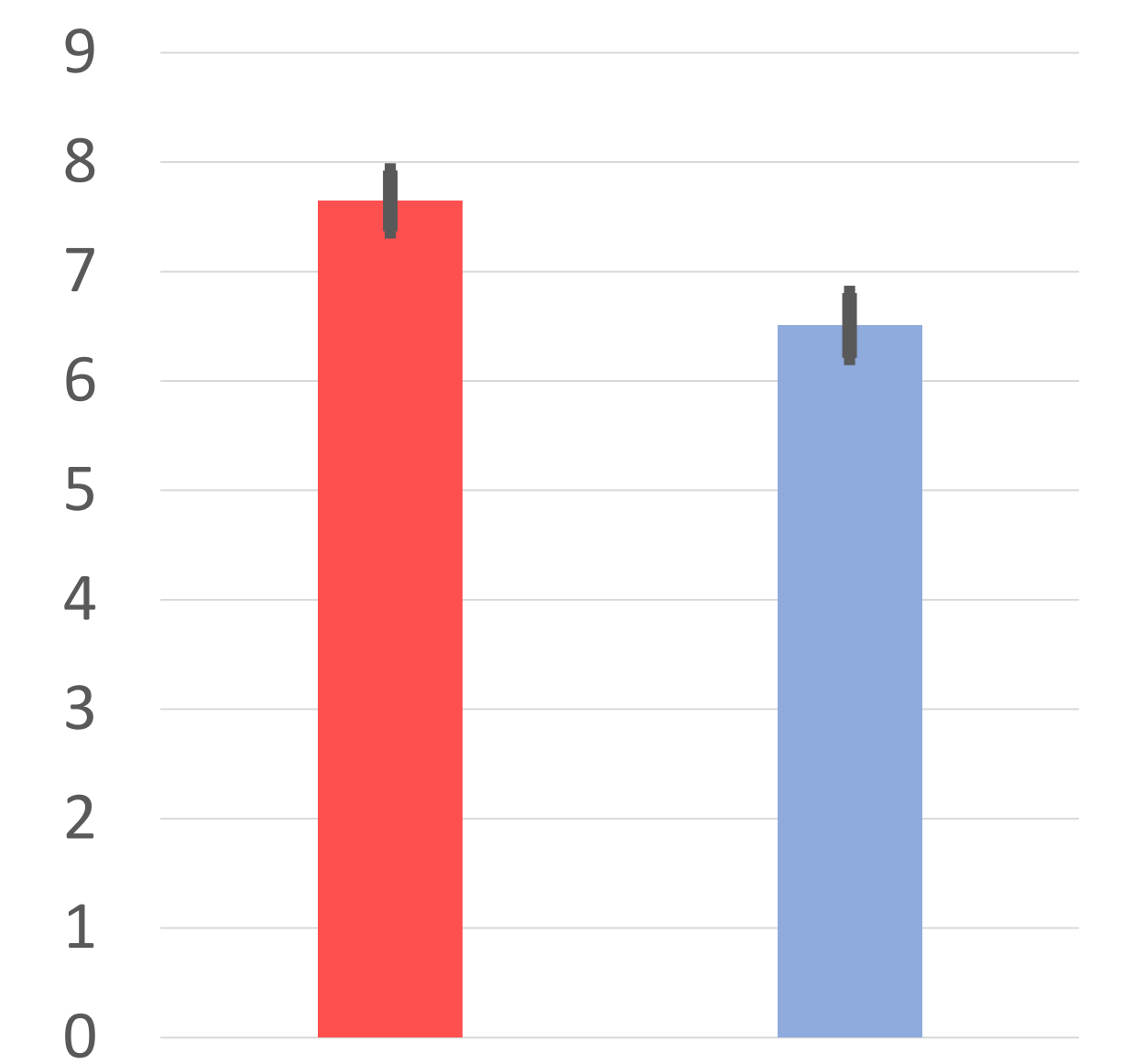
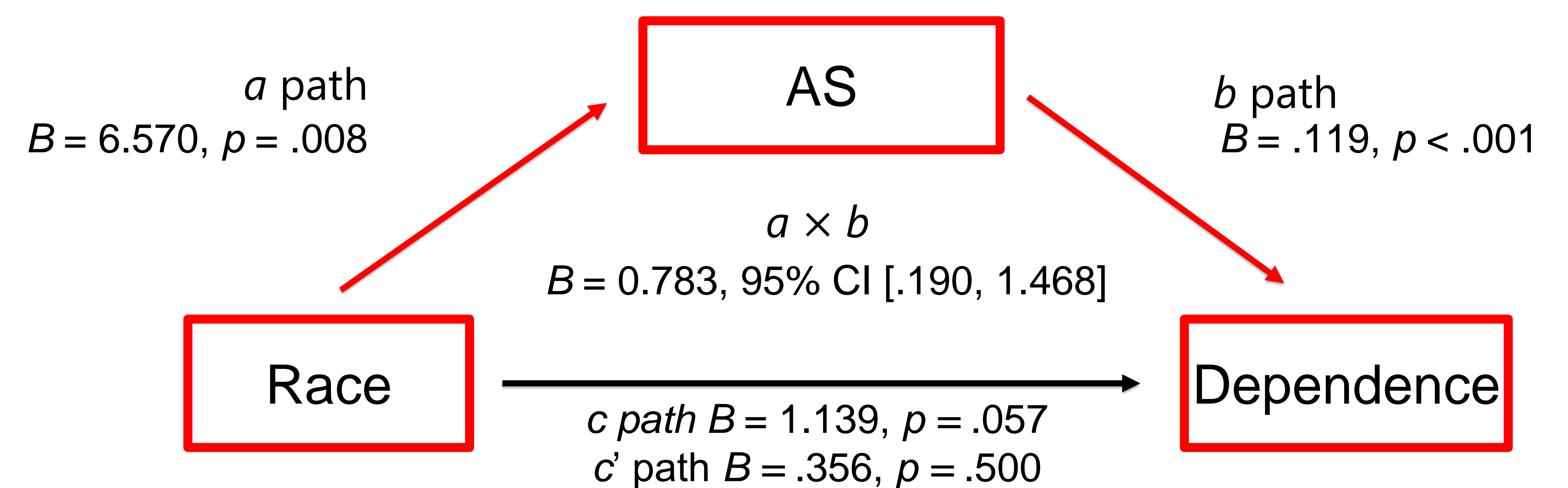


Figure 4. Mediation Model



Conclusions

- Consistent with Hypothesis 1, racial/ethnic minorities higher levels of anxiety sensitivity than White participants. However, our hypotheses pertaining to e-cigarette dependence was not supported.
- Results of the mediation model should be interpreted with caution given the limitations of the model in accounting for e-cigarette dependence. However, the pattern of findings indicates the need for additional research examining associations among race/ethnicity, AS, and e-cigarette dependence.
- Results contribute to greater understanding of the associations of race/ethnicity and anxiety sensitivity on e-cigarette use in adults. Additional research is needed to understand patterns of e-cigarette use in relation to race/ethnic background.
- Limitations of the current study include: (1) the use of self-report measures, (2) participation via web-based questionnaire platform, and (3) small number of participants in each race/ethnic group.