

Abstract

Improving our understanding of cognitive and physiological profiles in anxiety and depression has the potential to reveal novel ways to target and improve treatments for these prevalent mental health conditions. The present study examined the impact of self-reported anxiety and depression symptoms on three established decision-making measures, the Iowa Gambling Task (IGT; Bechara, Damasio, Damasio, & Anderson, 1994), Balloon Analogue Risk Task (BART; Lejuez et al., 2002), and Game of Dice Task (GDT; Brand et al., 2005), in a diverse sample of 100 college students (age 18 to 35). Physiological measures of tonic heart rate variability and galvanic skin response were obtained to better characterize autonomic flexibility and sympathetic reactivity, respectively, during decision-making performance. Interoceptive sensitivity, measured via a heart beat perception task (Schandry, 1981), was also examined as a potential moderator in the relationship between sympathetic reactivity and decision-making. Consistent with the literature, BART performance was negatively associated with IGT performance, while GDT performance was positively associated with IGT performance. Contrary to our hypotheses, physiological measures did not distinguish individuals who reported anxiety and/or depression from those who did not. Of the three tasks, only IGT performance was associated with sympathetic reactivity. Consistent with our hypotheses, anxiety and greater sympathetic reactivity to losses in the task predicted better scores. Interoceptive sensitivity moderated the association between sympathetic reactivity and IGT performance, but only among those with anxiety, with better performance associated with a combination of lower interoceptive sensitivity and higher sympathetic reactivity. Low tonic HRV predicted worse IGT performance in depressed participants and worse

GDT performance in anxious participants. These findings, though preliminary, have implications for treatment advances involving HRV biofeedback and interoceptive exposure. Our findings also highlight substantial differences between the IGT, BART, and GDT in their associations with anxiety, depression, and physiological markers, for consideration in cross study comparisons and future research.