

Abstract

The polyvagal theory, the neurovisceral integration model, and previous studies suggest a positive association between vmHRV (vagal mediated heart rate variability) and a wide range of social behaviors promoting social connectedness and positive relationships including emotion recognition. The current research investigated the relationship between vmHRV across three phases and performance on an emotion recognition task with morphing emotional expressions among a sample of 80 normal university students. HRV measurement and emotion recognition task were conducted separately on two days. HRV of the participants were measured at resting phase, during exposure to the partner's suffering when the partner was instructed to complete a cold pressor task, and at recovery phase. HF-HRV was taken to index vmHRV or vagal/parasympathetic activity. Correlative analyses showed that the differences in vmHRV between phasic and resting stage predict response times in emotion recognition task. Inconsistent with previous studies, resting vmHRV is not associated with performance on emotion recognition and accuracies of emotion recognition is not associated with any vmHRV variables.

Introduction

Searching for the relationship between physiological activities and important socio-psychological constructs has long been of interest in social and biological sciences. Investigating in how these traits or abilities important to maintaining appropriate social connections are implied by physiological markers helps us understand the purpose of these physiological activities and the effect of them on psychological and behavioral manifestation. Vagal modulation of the heart (activity of the vagus nerve), which can be indirectly and non-invasively measured by vagally mediated heart rate variability (vmHRV) (Task Force, 1996), has been suggested to be associated