Introduction

- Daily stress can be influenced by chores and relationship difficulties (Rickenbach, Almeida, Seeman, & Lachman, 2014, p.852).
- Anxiety can occur from repeated stress but how a person is exposed to stress can effect the symptoms and response (Zhang, Hetzel, Shah, Atchley, Blume, Padival, & Rosenkranz, 2014, p.e102247).
- Cortisol is part of the stress response, protecting the body throughout the psychophysiology changes (Heaney, Carroll, & Phillips, 2014, p. 465).
- The daily cortisol levels and DHEA are directly related to physiological health and psychological well-being (Heaney, Carroll, & Phillips, 2014, p. 465).
- Over time diet has changed having more sugar, being processed to last longer and less nutrients effecting health, ability to learn, and development (Rasmussen, 2012, p.156).
- In a study used to associate personality to certain response, the cold pressor task was successful in inducing stress in the participants (Kupper, Pelle, & Denollet, 2013, 1194).
- Cortisol and ghrelin levels were recorded as a result of the cold pressor task, to find a correlation between stress and late night eating (Geliebter, Atchley, & Gluck, 2013).
- The hypothesis for the present study states that participants with a healthy lifestyle (based on nutrition and physical activity) will have a higher tolerance to the stress of a cold pressor test (measuring any alteration of the blood pressure and heart rate).

Results

- **Descriptive**
  - The overall health according to the Health and Well-Being Questionnaire resulted in a mean of 12.30 and a standard deviation of 3.34.
  - The baseline mean for heart rate (M=93.67) and the standard deviation (SD=24.85) were taken before the stress was induced.
  - The experimental mean for the heart rate during the cold pressor task was taken (M=97.11) as well as the standard deviation (SD=21.81).
- **Analysis**
  - The Spearman’s Rho test was used to calculate the correlation between the baseline HR, the experimental HR, and the overall health of the participants.
  - The results showed there was a positive correlation between the overall health and the experimental HR (r(8)= .732, p< .05).
  - There was no significant correlation between the overall health and baseline HR (r(8)=.633, p<.05).

Discussion

- **Limitations**
  - In this experiment a small sample size consisting of 10 total participants, limited power, therefore limiting the ability to make a good decision based off the statistics (if it resulted in rejection or failure to reject).
  - Of the 10 participants only two were male, influencing the male to female ratio.
  - The GSR was not calculated with cold pressor task for safety reasons.
  - The blood pressure cuff was inaccurate and slow but consistent, often resulting in an error.
  - While participating in the cold pressor task the participants were subject to a memory test which could have influenced stress and increased the HR and BP.

Method

- **Participants**
  - All the participants involved (N=10) are students for Eastern Connecticut State Universities.
  - Each participant was selected for the Summer Research Institute.
  - The ratio of males to females was imbalanced, a majority of the participants being female (n=8).
  - The ages of the participants ranged from 18-20 years old, the mean being 18.90 and the standard deviation being .74.
  - The class standing consisted of freshmen (n=1), sophomores (n=5), and juniors (n=4).
  - The majority of the participants are white (n=8) while the remaining are Hispanic (n=2).
- **Materials**
  - The Health and Well-Being Questionnaire determined overall health by asking about physical activity and nutrition habits.
  - The electronic blood pressure cuff calculated the heart rate and blood pressure.
  - The cold pressor task induced the participants stress.
- **Procedure**
  - The pencil and paper test was administered to determine the overall health of the participants in a class room setting.
  - The pencil and paper test was based on physical activity and nutrition.
  - While in a laboratory setting the participants blood pressure (BP) and heart rate (HR) were assessed, after three minutes of rest, as a baseline using an electronic blood pressure cuff.
  - The BP and HR where taken a second time while the participants were exposed to a stressor (the cold pressor task).

References


