The Study of Self-Reported Anxiety Scores and Psychophysiological Responses During a Stressful Public Speaking Situation

Marisa LaBrecque

Introduction

- Facility induced stress was presented in the situation of public speaking. The definition of stress in regards to this research, can be best defined as being related to public speaking anxiety. Stress can be defined as a person feeling physiologically uncomfortable (Witt, Brown, Roberts, Weisel, Sawyer, & Behnke, 2006).
- The paper-pencil test of Personal Report of Confidence as a Speaker was used in this research to be compared to heart rate and galvanic skin response during public speaking. Prior research has measured heart rate in correlation to a virtual public speaking simulation (Felnhofer, Kothgasser, Hetterle, Beutl, Helmut, & Kryspin-Exner, 2014).
- The paper-pencil test of The TALKAHOLIC Scale was used in this research to also be compared to HR and GSR, prior research has studied heart rate while participants spoke of a stressful event (Jaslow et al., 2013), this research was proposed using a real-life public speaking situation.
- This research experiment required an audience to be present throughout the duration of the participant's public speech, prior research has analyzed this factor as well (Witt & Behnke, 2006).

Hypothesis

- The scores of the Personal Report of Confidence as a Speaker measure will be positively correlated to Heart Rate and Galvanic Skin Response. The scores of the TALKAHOLIC Scale will also negatively correlate with Heart Rate and Galvanic Skin Response.

Discussion

- The hypothesis of PRCs being positively correlated to HR and GSR was supported. The hypothesis of scores of the TALKAHOLIC Scale being negatively correlated with HR was failed to reject to null, no significance was found.
- This study showed that there was significance between HR and GSR in a negative correlation; where HR would increase as GSR would decrease, this prediction never occurred.
- Limitations of this study were the small sample size of ten participants, as well as the gender gap between male and female.
- This study was also done in conjunction with multiple other studies, results from outside studies may have affected the HR and GSR results of this experiment.
- Participants may have heard of the prompts beforehand
- Future research should have a constant audience size present for each participant, in addition to a large sample size.
- Other researchers should also have each participant perform their public speech sequentially.

Methods

Participants:
- Consisted of undergraduate students at Eastern Connecticut State University (N=10) of both males (n=2) and females (n=8), all students were involved in the Summer Research Institute.
- Class standing was divided into freshman (n=5) and junior (n=4).
- Ethnicity was predominantly white (n=8) with a smaller sample of Hispanic students (n=2).
- The mean of age was 25.70 with a standard deviation of 0.49
- The mean score of talkativity was M=28.00 for with a standard deviation of S.D.=13.88
- The mean score of self-reported public speaking anxiety was M=87.60 with a standard deviation of S.D.=25.17
- The baseline heart rate (HR) overall was M=88.40 with a standard deviation of S.D.=12.11
- The mean HR during public speaking was M=99.19 with a standard deviation of S.D.=12.23
- The baseline galvanic skin response (GSR) was M=.38 with a standard deviation of S.D.=.09
- The mean GSR score during public speaking was M=.75 with a standard deviation of S.D.=.16

Procedure:
- Participants were given a four question demographic information survey to complete. Followed by a 16-question, 5-step Likert-type scale of Self-Perceived Communication Competence (SPCC).
- They then completed a 34-question, 5-step Likert-type scale of Personal Report of Confidence as a Speaker (PRCS).
- A baseline heart rate and galvanic skin response score was recorded using a Biopac system.
- Participants were told that they will receive a prompt of two questions, then they will receive one minute of preparation time, followed by one or two minutes to present.
- They were also told that they will find out how much time they’ll have to present after receiving the prompt.
- The prompt was: “Describe how you are qualified for your dream job” and “Discuss the topic of Neuropsychology.”
- Guests were present while each participant presented their speech.

Results

A Spearman’s Rho test was performed using SPSS-22 to test the hypothesis that test scores of talkativity and self-evaluated public speaking anxiety (PSA) will be predictable factors to correlate to the results of HR and GSR during a public speaking situation. Scores from PSA (M=87.60, S.D.=25.17) have a significant positive correlation with GSR scores (M=.75, S.D.=.16) during public speaking at r=.85 and a p-value of .002, <.01. Significance was also found with the negative correlation between HR (M=99.19, S.D.=12.23) and GSR (M=.75, S.D.=.16) during public speaking at r=−.68 and a p-value of .02, <.05. There was no significant correlation between Talkativity scores and PRCS, or PRCS and HR.

References