Self-Perception & Cortisol Estimates of Communication Apprehension by AWS & AWNS During Various Speaking Activities

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Abstract

The relationship between a physiological measure of anxiety (i.e., cortisol) and perceptual judgments of communication apprehension were evaluated across four different speaking situations in AWS and AWNS groups. Significant group differences were found in self-perceived anxiety levels in speaking situations; however no such differences were apparent for the cortisol measures.

Introduction

Anxiety is a negative emotion and consists of state and trait components. State anxiety is specific to a given situation and may be triggered by factors associated with social interactions, whereas trait anxiety refers to an individual's general level of anxiety, regardless of situational factors that are likely to evoke anxiety. Debate remains whether persons who stutter (PWS) exhibit trait anxiety (Craig & Tran, 2014); however there is convincing evidence that PWS report increased levels of anxiety compared to people who do not stutter (PWNS), particularly in social situations. Heightened state anxiety specific to social situations is termed *communication apprehension*.

Situational variation of stuttering was documented over 75 years ago, whereby persons who stutter reported that it was more difficult to speak in front of an audience compared to alone or a pet (Hahn, 1940; Porter, 1939; Mullen, 1986). Studies examining communication apprehension have been based on surveying the attitudes of PWS and PWNS by self-report questionnaires in a limited number of speaking situations (e.g., Craig, 1990; Gabel et al., 2002). Missing from these past studies is a detailed examination of communication apprehension across a number of speaking conditions among the same individuals. Furthermore, there have been no attempts to evaluate the alignment of self perception to physiological measures of stress associated with various speaking situations.

The present study used a combination of physiological (cortisol) and self-perception measures to examine communication apprehension associated with situational variability. The following hypotheses were posed:

(1) AWS will differ from AWNS in cortisol levels in varying speaking situations.

(2) AWS will differ from AWNS in self-reported anxiety levels in varying speaking situations.

Methods

Participants:
Ten (4 female & 6 male) AWS (M = 39 yrs) and 10 age/sex matched AWNS (M = 39 yrs).

Data Collection & Analysis:
Fluency Measure: 10-pt self-rating stuttering severity scale

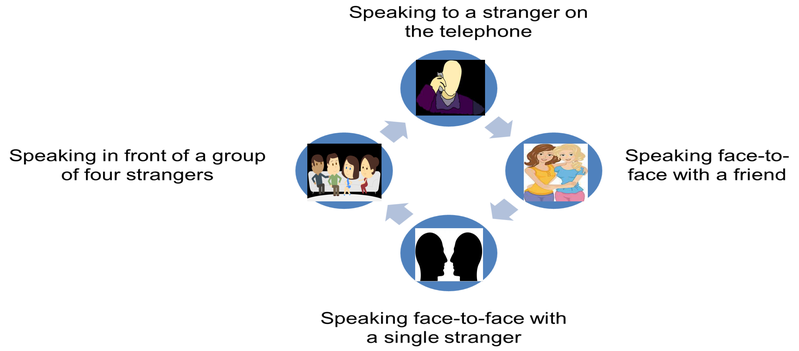
Anxiety Measures:
(1) 10-pt Speaking Task Response Scale - STRS (Bray & James, 2009)

(2) Cortisol levels using Salivette methodology (van der Merwe et al, 2011)

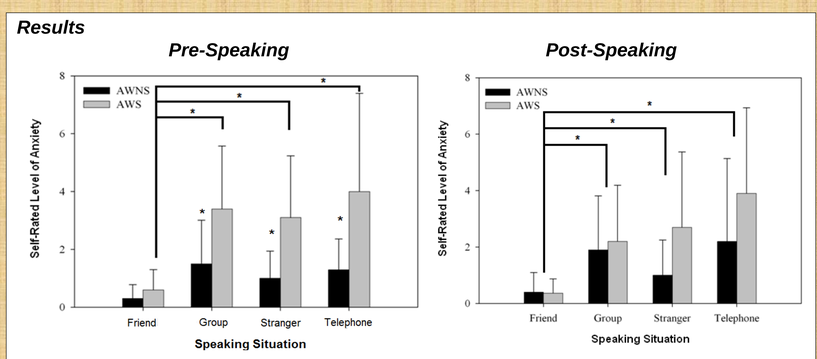
Sampling Design

Speaking Situations

Each participant was sampled on 5 consecutive days between the period of 3-6pm. Day 1 served as a baseline. The next 4 days involved different speaking situations in randomized order. Cortisol and Self-Rating (STRS) scores were taken approx 5 min **before** and 20-30 min **after** the speaking tasks. A 24hr *pre-warning* was provided at the end of the session to inform the participant of the upcoming speaking situation.

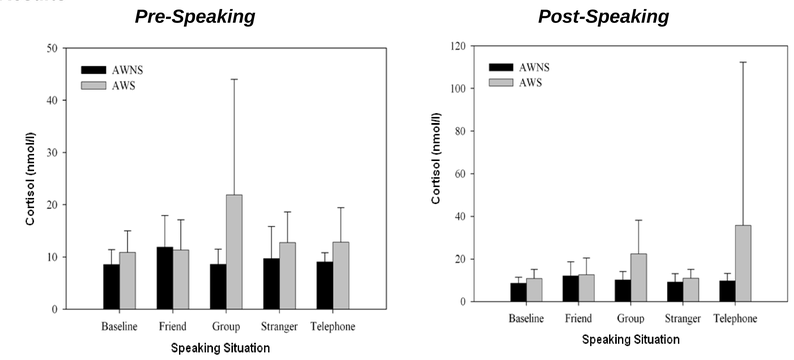


Results



At pre-speaking, a significant difference was found in self-reported anxiety levels between AWS and AWNS for each speaking situation with the exception of "Friend." At post-speaking, AWS and AWNS did not differ although AWS reports were generally higher. There was a significant main effect for speaking situation.

Results



At both pre- and post-speaking settings, no significant differences were found in salivary cortisol levels across baseline and the four different speaking situations between AWS and AWNS.

Discussion

The present study failed to find any significant difference in physiological levels of anxiety in AWS and AWNS across various speaking situations. Significant group differences were found in self-perceived anxiety, but only during the pre-speaking session.

Past reports have suggested that situations which enhance self-attention are likely to exacerbate social anxiety and subsequent stuttering, especially those situations related to group composition (Mullen, 1986). As a result, these situations are accompanied by anxious anticipation, distress and avoidance. However, there are reports that in situations with extreme focus on self-attention (e.g., enthusiasm, anger), social considerations related to stuttering are suppressed (Bloodstein & Bernstein-Ratner, 2008). These mixed findings paired with the current observation of no strong physiological (cortisol) response to situational variation would suggest that anxiety in itself is not a major interfering factor in communication apprehension.

Alm (2014) suggests that it is cognitive activity that interferes with speech in social situations rather than anxiety. Social cognition involves thoughts about what one thinks of oneself, and what others may think or expect, regarding how one should behave. For persons who are concerned about stuttering it is likely that social situations often involve thoughts about possible scenarios, including what others may think if they stutter and alternative plans of how to act. The amount of social cognition about stuttering in a certain situation is hypothesized to be related to three main factors: (a) the importance and the possible consequences of the situation, (b) the risk for stuttering, and (c) uncertainty about the best way to act.

The results of the present study fit nicely with Alm's (2014) notions of social cognition. Namely, communication apprehension evidenced by AWS in various speaking situations may have more to do with how one thinks of oneself rather than resulting from the emotions of social anxiety.

Conclusions

Overall results of this study would suggest that there is a relationship between communication apprehension and various speaking situations among AWS. This is most evident in the self-perceived anxiety associated with speaking. Any physiological connection to anxiety associated with various speaking situations appears to be less obvious. The situational variability in communication apprehension may be linked to social cognition rather than elevated anxiety.

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