A model clarifying the role of mediators in the variability of mood states over time in people who stutter

Ashley Craig [a,*], Elaine Blumgart [a], Yvonne Tran [a,b]

[a] *John Walsh Centre for Rehabilitation Research, Kolling Institute of Medical Research, Sydney Medical School-Northern, The University of Sydney, St Leonards, NSW 2065, Australia*
[b] *Key University Centre for Health Technologies, University of Technology, Sydney, Broadway, NSW 2007, Australia*

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ABSTRACT

Purpose: Elevated negative mood states such as social anxiety and depressive mood have been found in adults who stutter. Research is needed to assist in the development of a model that clarifies how factors like self-efficacy and social support contribute to the variability of negative mood states over time.
Method: Participants included 200 adults who stutter. A longitudinal design was employed to assess change in mood states over a period of five months. Hierarchical directed regression (path analysis) was used to determine contributory relationships between change in mood states and self-efficacy, social support, socio-demographic and stuttering disorder variables. Participants completed a comprehensive assessment regimen, including validated measures of mood states, perceived control (self-efficacy) and social support.
Results: Results confirmed that self-efficacy performs a protective role in the change in mood states like anxiety and depressive mood. That is, self-efficacy cushioned the impact of negative mood states. Social support was only found to contribute a limited protective influence. Socio-demographic variables had little direct impact on mood states, while perceived severity of stuttering also failed to contribute directly to mood at any time point.
Conclusions: Mood was found to be influenced by factors that are arguably important for a person to cope and adjust adaptively to the adversity associated with fluency disorder. A model that explains how mood states are influenced over time is described. Implications of these results for managing adults who stutter with elevated negative mood states like social anxiety are discussed.

Educational Objectives: The reader will be able to describe: (a) the method involved in hierarchical (directed) regression used in path analysis; (b) the variability of mood states over a period of five months; (c) the nature of the mediator relationship between factors like self-efficacy and social support and mood states like anxiety, and (d) the contribution to mood states of socio-demographic factors like age and education and stuttering disorder variables like stuttering frequency and perceived severity.

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* Corresponding author at: John Walsh Centre for Rehabilitation Research, Kolling Institute of Medical Research, Sydney Medical School-Northern, The University of Sydney, St Leonards, NSW 2065, Australia. Tel.: +61 2 99264962; fax: +61 2 99264045.
E-mail address: a.craig@sydney.edu.au (A. Craig).

1. Introduction

There is now substantial evidence supporting the conclusion that chronic stuttering is associated with elevated negative mood states (Craig & Tran, 2014), and as argued elsewhere, it is presumed that this mental health burden is a result of struggling with the adversity associated with a chronic fluency disorder (Alm, 2014; Blood, Boyle, Blood, & Nalesnik, 2010; Iverach & Rapee, 2014). This negative impact has been shown to occur in children aged as young as three to five years of age (Ntouroua, Conture, & Walden, 2013). A recent meta-analysis provided persuasive evidence that chronic stuttering in adults is associated with abnormally elevated trait and social anxiety (Craig & Tran, 2014), and the theoretical and clinical foundations for this association have been elegantly argued (Alm, 2014; Iverach & Rapee, 2014; Smith, Iverach, O'Brian, Kefalianos, & Reilly, 2014). Further, adult stuttering has been found to be associated with poorer quality of life (Yaruss, 2010) in domains such as vitality, social and emotional functioning (Craig, Blumgart, & Tran, 2009; Koedoot, Bouwmans, Franken, & Stolk, 2011), and rates of elevated negative mood states like social anxiety and interpersonal sensitivity are high (Craig, 1990; Craig, Hancock, Tran, Craig, & Peters, 2003; Craig & Tran, 2006; Craig, Tran, & Craig, 2003; Ezrati-Vinacour & Levin, 2004; Iverach, O'Brian, et al., 2009; Kraaimaat, Vanryckeghem, & Rien Van Dam-Baggen, 2002; Mulcahy, Hennessey, Beilby, & Byrnes, 2008; Tran, Blumgart, & Craig, 2011). As an example, the prevalence of social anxiety disorder is substantially higher (around 40%) in adults who stutter than those (around 4%) found in the non-stuttering community (Blumgart, Tran, & Craig, 2010a).

In cross-sectional research in adults who stutter, resilience was found to be associated with protective factors such as self-efficacy, social support and social integration (Craig, Blumgart, & Tran, 2011). Resilience was defined as the presence of low levels of negative mood states. To confirm this relationship between factors like perceived control/self-efficacy and mood states, prospective research will be needed to clarify whether these factors perform a protective role when a person is faced with the ongoing demands and pressures associated with stuttering. Clarification will hopefully lead to more effective treatment of stuttering.

Self-efficacy measures the strength of a person's expectation about performing a task successfully in the present and in the future, and has been shown to be a mediator of health outcomes (Arnstein, Caudill, Mandle, Norris, & Beasley, 1999; Bandura, 1977). For example, evidence suggests self-efficacy plays a mediatory role between chronic pain and depressive mood, resulting in a lessening of the negative burden associated with persistent pain in people with chronic pain and in the neurologically injured (Craig et al., 2013). Self-efficacy was shown to account for a large proportion of the variance between pain and mood (Craig et al., 2013). Additionally, research has found that self-efficacy performs a protective mediating role between stressful life events and depression (Maciejewski, Prigerson, & Mazure, 2000). Presumably, the cognitive process of perceiving a connection between one's actions and outcomes strengthens resolve and adaptive capacity (Bandura, 1977). While the mediating influence of self-efficacy has been studied in people with depression (Maciejewski et al., 2000) and in people with chronic pain (Arnstein et al., 1999; Craig et al., 2013), the mediatory role of self-efficacy to mood states such as social anxiety and depressive mood in people who stutter requires investigation. Additionally, it is important to study the contributory influence of social support to mood states, given that it has been shown that superior social support is associated with lower levels of distress in adults who stutter (Blumgart, Tran, & Craig, 2014).

In cross-sectional research, we have shown that poor self-efficacy and poor social support are related to elevated levels of negative mood states (Blumgart et al., 2014; Craig et al., 2011). It is now important to clarify the roles that these two variables perform to the change in negative mood states like anxiety over time. For instance, does self-efficacy and social support exert a protective influence on mood states in people who stutter? Socio-demographic variables like age or education, and stuttering disorder factors such as stuttering frequency, have been studied for their contribution to mood states or quality of life, however, they have rarely been found to be related (Craig et al., 2009, 2011; Craig, Hancock, et al., 2003; Craig, Tran, et al., 2003). One study found some evidence for pre-treatment stuttering severity to be related to the presence of mental health disorder (Iverach, Jones, et al., 2009). Given that demographic and stuttering disorder variables are commonly measured in clinical settings, it was believed important to determine their contribution, if any, to change in mood over time.

The major objectives of this research involved conducting prospective research and path analysis to investigate the contributory influence of self-efficacy and social support on mood states. It was hypothesized that self-efficacy performs a protective contributory role to mood status, that is, it exerts an ongoing cushioning/protective influence on a person's levels of mood and anxiety. Second, it was hypothesized that social support will also have a similar contributory relationship. Finally, it was hypothesized that socio-demographic and stuttering severity factors will have a minimal contributory influence.

2. Method

2.1. Participants

Participants included 200 male and female adults who stutter. Full details of the sample demographics can be found elsewhere (Craig et al., 2009; Tran et al., 2011). Participant details concerning socio-demographic, health and stuttering frequency information are shown in Table 1. Participants were invited into the study after being approached through contacts with stuttering self-help groups in New South Wales (NSW), private speech pathology practices, general medical practitioners, speech pathology departments of public hospitals and community health centers. Recruitment from these sources continued till 200 adults who stuttered had agreed to participate. Based on effect sizes found in prior research (Craig, Hancock,