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Review

Anxiety of children and adolescents who stutter: A review

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ABSTRACT

Purpose: Adults who stutter have heightened rates of anxiety disorders, particularly social anxiety disorder, compared with non-stuttering controls. However, the timing of anxiety onset and its development in relation to stuttering is poorly understood. Identifying the typical age of anxiety onset in stuttering has significant clinical implications and is crucial for the management of both disorders across the lifespan. The present review aims to determine the scope of the research pertaining to this topic, identify trends in findings, and delineate timing of anxiety onset in stuttering.
Methods: We examine putative risk factors of anxiety present for children and adolescents who stutter, and provide a review of the research evidence relating to anxiety for this population.
Results: Young people who stutter can experience negative social consequences and negative attitudes towards communication, which is hypothesised to place them at increased risk of developing anxiety. The prevalence of anxiety of young people who stutter, and the timing of anxiety onset in stuttering could not be determined. This was due to methodological limitations in the reviewed research such as small participant numbers, and the use of measures that lack sensitivity to identify anxiety in the targeted population.
Conclusions: In sum, the evidence suggests that anxiety in stuttering might increase over time until it exceeds normal limits in adolescence and adulthood. The clinical implications of these findings, and recommendations for future research, are discussed.

Educational Objectives: The reader will be able to: (a) discuss contemporary thinking on the role of anxiety in stuttering and reasons for this view; (b) describe risk factors for the development of anxiety in stuttering, experienced by children and adolescents who stutter (c) outline trends in current research on anxiety and children and adolescents with stuttering; and (d) summarise rationales behind recommendations for future research in this area.

Contents

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1. Introduction

Anxiety is a response to perceived danger, encompassing behavioural, physiological and cognitive components. The behavioural component typically involves avoidance of anxiety provoking situations; the physiological component can include physical reactions such as increased heart rate, and sweating; and the cognitive component is associated with adverse thoughts and beliefs, and an expectation of harm (Craske et al., 2009; Kraaimaat, Vanryckeghem, & Dam-Baggen, 2002). As such, anxiety is regarded as a multidimensional construct (Iverach, Menzies, O'Brian, Packman, & Onslow, 2011). Anxiety is believed to have trait and state components. Trait anxiety is stable across different situations, whereas state anxiety is transitory and only experienced in specific situations (Endler & Parker, 1990).

Heightened anxiety can be adaptive when it facilitates survival, (for example, when adrenalin assists with running from danger), or improves performance (for example, when increased attention helps in an exam) (Beesdo-Baum & Knappe, 2012). However, when anxiety becomes persistent and excessive, and interferes significantly with life functioning, it may be classified as a diagnosable mental disorder according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013). Anxiety disorders have an estimated prevalence rate of 10% in the general community (Rapee, 2002), with a median age of onset of 11 years (Kessler et al., 2005). A variety of factors can precipitate their development, including genetics, family and environmental influences, and temperament and cognitive styles (Beesdo-Baum & Knappe, 2012; Iverach & Rapee, 2013; Rapee, Schniering, & Hudson, 2009).

Anxiety disorders are associated with a range of negative outcomes, including reduced self-esteem and quality of life, and increased risk of comorbid disorders such as depression and substance abuse (Barrera & Norton, 2009; Costello, Mustillo, Erkanli, Keeler, & Angold, 2003; Kertz & Woodruff-Borden, 2011; Massion, Warshaw, & Keller, 1993; Stevanovic, 2013; Wolitzky-Taylor, Bobova, Zinbarg, Mineka, & Craske, 2012). They also pose substantial economic burden on the wider community due to reduced labour force participation, dependence on government assistance, and high medical resource use (Hoffman, Dukes, & Wittchen, 2008; Roy-Byrne & Wagner, 2004; Waghorn & Chant, 2005).

1.1. Social anxiety disorder and stuttering

Of particular relevance to the stuttering population is social anxiety disorder (also known as social phobia). Social anxiety disorder is a type of anxiety disorder characterised by a significant and persistent fear of humiliation and negative evaluation in social or performance-based situations (DSM-5; American Psychiatric Association, 2013; Iverach & Rapee, 2013). As discussed in relation to anxiety disorders in general, there are multiple pathways to acquisition of social anxiety disorder (Iverach & Rapee, 2013). In the general population, social anxiety disorder typically starts in early adolescence (Beesdo et al., 2007; Lieb et al., 2000), with a median age on onset of 13 years (Kessler et al., 2005).

While there is an 8–13% prevalence of social anxiety disorder (Iverach & Rapee, 2013; Kessler et al., 2005), research shows greatly inflated rates in clinical samples of stuttering adults with findings ranging from 21 to 60% (Blumgart, Tran, & Craig, 2010; Iverach, O'Brian, et al., 2009; Menzies et al., 2008; Stein, Baird, & Walker, 1996). Effective verbal communication is integral to our ability to learn and develop, establish relationships, and maintain a sense of well-being (Iverach, O'Brian, et al., 2009). Stuttering disrupts the communication process, resulting in unpredictable, impeded, and sometimes visually disfiguring speech (Menzies et al., 2008). This in turn can evoke a variety of physiological, behavioural, cognitive, and emotional reactions in the speaker (Beilby & Yaruss, 2012). When considered in this context, it seems intuitive that stuttering is associated with anxiety affecting the social domain.

While contemporary thinking favours anxiety as a consequence and mediator of stuttering rather than a cause (Craig, 2000; Craig & Tran, 2006), the underlying mechanisms linking stuttering and anxiety remain unclear (Attanasio, 2000).

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