



## A speech and psychological profile of treatment-seeking adolescents who stutter

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### ABSTRACT

**Purpose:** The purpose of this study was to evaluate the relationship between stuttering severity, psychological functioning, and overall impact of stuttering, in a large sample of adolescents who stutter.

**Method:** Participants were 102 adolescents (11–17 years) seeking speech treatment for stuttering, including 86 boys and 16 girls, classified into younger (11–14 years,  $n = 57$ ) and older (15–17 years,  $n = 45$ ) adolescents. Linear regression models were used to evaluate the relationship between speech and psychological variables and overall impact of stuttering. **Results:** The impact of stuttering during adolescence is influenced by a complex interplay of speech and psychological variables. Anxiety and depression scores fell within normal limits. However, higher self-reported stuttering severity predicted higher anxiety and internalizing problems. Boys reported externalizing problems—aggression, rule-breaking—in the clinical range, and girls reported total problems in the borderline-clinical range. Overall, higher scores on measures of anxiety, stuttering severity, and speech dissatisfaction predicted a more negative overall impact of stuttering.

**Conclusion:** To our knowledge, this is the largest cohort study of adolescents who stutter. Higher stuttering severity, speech dissatisfaction, and anxiety predicted a more negative overall impact of stuttering, indicating the importance of carefully managing the speech and psychological needs of adolescents who stutter. Further research is needed to understand the relationship between stuttering and externalizing problems for adolescent boys who stutter.

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## 1. Introduction

Adolescence is characterized by a period of rapid and complex emotional, physical, social, and cognitive development (Spear, 2000). It is also a time when peer support is integral to self-esteem and wellbeing, pressure to conform to social and group norms is paramount, and self-consciousness is heightened (Adriaensens, Beyers, & Struyf, 2015; Heaven, 2001). Self-

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consciousness refers to increased awareness of both external and internal aspects of the self, such as physical appearance, social performance, and inner feelings (Davis & Franzoi, 1999). In a similar manner, self-esteem encompasses a subjective evaluation of the self, including appraisal of one's abilities, attributes, and worth (Brown, Dutton, & Cook, 2001). Self-esteem has been identified as a significant predictor of physical and mental health among adolescents from the general community (Mann, Hosman, Schaalma, & de Vries, 2004).

Research has also shown that negative peer experiences, such as experiencing teasing and bullying, may be associated with lower self-esteem during adolescence (O'Moore & Kirkham, 2001). In particular, negative peer experiences and lowered self-esteem have been found among adolescents with disorders such as specific language impairment (Conti-Ramsden & Botting, 2004; Durkin & Conti-Ramsden, 2010; Wadman, Durkin, & Conti-Ramsden, 2008), autism spectrum disorder (van Roekel, Scholte, & Didden, 2010), cerebral palsy (Lindsay & McPherson, 2012; Miyahara & Piek, 2006), learning disabilities (Baumeister, Storch, & Geffken, 2008; Valas, 1999), and chronic skin diseases such as acne, psoriasis, and eczema (Magin, Adams, Heading, Pond, & Smith, 2008). This suggests that difficulties with speech, language, learning, physical appearance, and daily functioning, may negatively impact peer relationships and self-esteem.

Anxiety is also common among adolescents with a range of disorders, including specific language impairment (Durkin & Conti-Ramsden, 2010), cleft lip palate (Hunt, Burden, Hepper, & Johnston, 2005), autism spectrum disorder (Simonoff et al., 2008), and children with chronic physical conditions such as epilepsy and cerebral palsy (Gortmaker, Walker, Weitzman, & Sobol, 1990). Longitudinal research has also shown a relationship between speech disorders in early childhood and anxiety disorders in early adulthood (Beitchman et al., 2001; Voci, Beitchman, Brownlie, & Wilson, 2006). In particular, children with a range of early speech impairments, including stuttering, were found to demonstrate a heightened rate of anxiety disorders, especially social anxiety disorder, at 19 years of age. This suggests that adolescents with speech impairment may experience the development of anxiety and social fears, and also indicates the potential for anxiety to be a concomitant of a range of disorders in adolescence.

### 1.1. Psychological impact of stuttering in adolescence

Stuttering during adolescence is associated with a host of negative experiences, including teasing, bullying, social isolation, and rejection (Beilby, Byrnes, & Yaruss, 2012; Blood et al., 2011; Davis, Howell, & Cooke, 2002). Evidence from several studies indicates that stuttering during adolescence may be associated with a negative impact on communication attitudes and competence, daily functioning, life satisfaction, quality of life, self-esteem, relationships and psychosocial functioning (Beilby et al., 2012; Blood & Blood, 2004; Blood et al., 2011; Erickson & Block, 2013; Van Borsel, Brepoels, & De Coene, 2011). For instance, adolescents who stutter may report negative attitudes to communication, negative peer experiences, low self-esteem, and heightened anxiety (Blood, Blood, Tellis, & Gabel, 2001; Blood & Blood, 2004; Blood et al., 2011; Mulcahy, Hennessey, Beilby, & Byrnes, 2008; Smith, Iverach, O'Brian, Kefalianos, & Reilly, 2014). Although this has not been found consistently across all studies (Craig et al., 1996; Hancock et al., 1998; Hearne, Packman, Onslow, & Quine, 2008), research evidence to date indicates that stuttering during adolescence may be influenced by a host of speech and psychological factors.

Therefore, the purpose of the present study is to evaluate the relationship between stuttering severity, psychological functioning, and overall impact of stuttering in a large sample of adolescents who stutter, including a brief review of the literature on this topic. This information can be applied to the clinical management of adolescents seeking treatment for stuttering.

#### 1.1.1. Impact of stuttering

The Overall Assessment of the Speaker's Experience of Stuttering (OASES; Yaruss & Quesal, 2010) has been used to evaluate the total impact of stuttering for children and adolescents who stutter (Beilby et al., 2012; Gunn et al., 2014; Mulcahy, Hennessey, Beilby, & Byrnes, 2008). The OASES includes four sections to evaluate general information, reactions to stuttering, communication in daily situations, and quality of life. Higher scores indicate a greater negative impact of stuttering, and are rated as mild, mild-moderate, moderate, moderate-severe, and severe. Findings from studies which have used the OASES have confirmed a moderate to moderate-severe impact of stuttering during adolescence (Beilby et al., 2012; Gunn et al., 2014), with total impact scores found to be correlated with stuttering frequency as measured by the percentage of syllables stuttered (Beilby et al., 2012) and anxiety (Mulcahy et al., 2008). Those findings highlight the potential for stuttering in adolescence to adversely impact a range of psychosocial factors evaluated by the OASES, including quality of life and communication in daily situations.

#### 1.1.2. Negative attitudes towards communication

In light of the impact of stuttering on daily communication, it is not surprising that several studies of adolescents who stutter have reported evidence of negative attitudes about communication, increased communication apprehension, lowered communication competence, and perceived difficulty communicating (Blood et al., 2001; Guttormsen, Kefalianos, & Naess, 2015; Hearne et al., 2008; Smith et al., 2014). For instance, Blood et al. (2001) investigated communication apprehension and competence among 39 adolescents who stutter and 39 non-stuttering controls. Significant differences were found between groups, with a larger proportion of adolescents who stutter reporting high communication apprehension (39%) and low communication competence (41%), compared to only 18% and 13% of non-stuttering controls respectively. In addition, lower communication competence was associated with higher stuttering severity. In a study with no control group, Erickson and

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