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The Five factor model of personality and stuttering

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Abstract

The present study investigated the five personality domains of Neuroticism, Extraversion, Agreeableness, Conscientiousness and Openness, as measured by NEO Five Factor Inventory (NEO-FFI), in a sample of twenty adults who stutter and compared with twenty control group matched to age and gender. Results reveal that mean scores of the personality dimension of Conscientiousness were significantly higher in adults who stutter compared to the control group. Furthermore, male who stutter characterized by significantly higher Neuroticism, than male control group. Following the present results, clinicians might include data on Conscientiousness and Neuroticism to follow an individualized counseling procedure.

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1. Introduction

Advanced stutterers' negative feeling and attitudes often need to receive considerable attention in therapy (Guitar, 2006). So, besides classic speech therapy procedures additional psychological based treatment and counseling should address problems possibly linked to the stuttering, e.g. social fears (Guitar, 2010). Here, the speech therapist could also examine the patient's feelings, beliefs and experiences along a focus on the treatment of the speech symptoms. This more broad therapeutic approach requires further input from professionals such as

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psychologists. Diagnosticians and therapists with a psychological background can provide a comprehensive therapeutic package which can help person who stutter to deal with cognitive, affective and behavioral responses relating to stuttering and its affects in different situations of everyday life (Ward, 2006). One essential approach to assess individual differences in the mentioned psychological variables stems from personality psychology. Personality refers to time stable characteristics of a persons resulting in individual differences in cognition, emotion and motivation.

In counseling situations, the self-report questionnaire called NEO-Five-Factor-Inventory (NEO-FFI) can help to characterize the patient (such as persons who stutter) (Haghshenas, 2010). In detail, this measure provides an assessment of the patient's personality based on the Five-Factor-Model (FFM) (Saucier, 1998). This model of personality is a hierarchical organization of personality traits in terms of five basic dimensions: Neuroticism, Extraversion, Agreeableness, Conscientiousness and Openness (McCrea & John, 1992). Studies on people who stutter and control persons have reported differences in their personality (Iverach et al., 2010; Bleek et al., 2011). Although heterogeneous results were observed in these studies, in particular Neuroticism was elevated in persons who stutter compared to control persons in both studies. Neurotic persons are characterized by being anxious, moody and emotional instable. Interestingly, Iverach et al. (2010) also provided evidence for higher Agreeableness and Conscientiousness in persons who stutter compared to control persons. Higher Agreeableness results in being more kind, sympathetic, cooperative, warm and considerate and Conscientiousness is associated with being reliable, careful and orderly (Thompson, 2008).

Therefore, the present study aims to explore the Five Factor Model of personality among adults who stutter on five personality domains of Neuroticism, Extraversion, Agreeableness, Conscientiousness and Openness, as measured by NEO Five Factor Inventory (NEO-FFI), which is a shortened version of the NEO PI-R and to compare scores on the five personality domains for adults who stutter with scores of matched control group.

2. Method

2.1. Participants

Participants included 40 persons ranging in age from 19 to 32 years of age. The experimental group consisted of 20 persons who stutter (mean age: 22.05; SD = 4.19), including 16 men (80%) and 4 women (20%), and a sex and age-matched control group of 20 persons who had no personal history of stuttering (mean age: 22.00, SD = 4.07).

2.2. Recruitment of participants

Eligibility criteria for inclusion in the sample consisting of persons who stutter were (1) age 17 and over, (2) developmental stuttering present before 12 years of age, (3) no more than 10 sessions of speech treatment for stuttering (4) no experience of psychotherapy and (5) a presence of stuttering confirmed by a speech and language pathologist.

The control met the following inclusion criteria: (1) age 17 and over, (2) no personal history of stuttering and (3) no experience of psychotherapy. All eligibility criteria in this study were determined by self-reports. The study was approved by the Ethics Committee of Tehran University of Medical Sciences. All subjects gave informed consent before participating in the study.

2.3. Material and procedure

40 adult in the present sample, completed the NEO Five Factor Inventory (NEO-FFI) (Costa & McCrae, 1992). The NEO-FFI is a 60-item, self-report measure which provides a comprehensive, global assessment of the five personality domains outlined in the Five Factor Model of personality, including: (1) Neuroticism (e.g., "when I'm under a great deal of stress, sometimes I feel like I'm going to pieces"); (2) Extraversion (e.g., "I like to have a lot of people around everyone I meet"); (3) Openness (e.g., "I have a lot of intellectual curiosity"); (4) Agreeableness (e.g., "I try to be courteous to everyone I meet"); (5) Conscientiousness (e.g., "I have a clear set of goals and work toward them in an orderly fashion"). In this commonly used questionnaire (Saucier, 1998), responses are made on a

5-point Likert scale, ranging from 1=Strongly Disagree, to 5=Strongly Agree, for each of the five 12-item scales. Therefore each dimension ranges 12 to 60 points.

2.4. Data analysis

Comparisons based on two-sample t-tests were calculated to test for significant differences in five personality domains between the persons who stutter and matched controls. As participants were matched 1:1 with respect to the gender distribution, but not with respect to age. For age we only made sure that the two groups do not differ significantly in their age.

3. Results and discussion

Mean scores of the personality dimension of Conscientiousness were significantly higher ($p \leq 0.05$) in adults who stutter compared to the control group. In terms of the remaining personality dimensions, means Neuroticism, Extraversion, Agreeableness and Openness scores for the stuttering group were not significantly different from mean scores for control group (with $p=0.08$ for Neuroticism and $p=0.057$ for Agreeableness). The descriptive results as well t-tests are presented in table 1.

Table 1. Mean NEO-FFI domain scores for stuttering and the control group. The last column includes the results of the t-test contrasting persons who stutter vs. controls with respect to each personality dimension.

Domain	Number	Sample	Mean	SD	t-test
Neuroticism	20	Stuttering	21.15	6.43	$t(38)=0.59, p=0.085$
	20	Control	17.95	4.91	
Extraversion	20	Stuttering	29.05	7.48	$t(38)=0.60, p=0.545$
	20	Control	27.75	5.92	
Openness	20	Stuttering	23.25	4.26	$t(38)= -0.57, p=0.570$
	20	Control	24.00	4.01	
Agreeableness	20	Stuttering	30.75	5.53	$t(38)= 1.96, p=0.057$
	20	Control	27.35	5.42	
Conscientiousness	20	Stuttering	33.65	5.94	$t(38)= 2.28, p=0.028$
	20	Control	29.45	5.68	

Interestingly, in comparison of male experimental group with male controls, mean scores of the personality dimension of Neuroticism was also significantly higher ($p=0.020$) for male adults who stutter (table 2).

Table 2. Mean NEO-FFI domain scores for male stuttering group and the male control group. The last column includes the results of the t-test contrasting persons who stutter vs. controls with respect to each personality dimension.

Domain	Number	Sample	Mean	SD	t-test
Neuroticism	16	Stuttering	21.38	6.31	$t(30)=2.46, p=0.020$
	16	Control	16.63	4.41	
Extraversion	16	Stuttering	30.31	7.40	$t(30)=0.92, p=0.361$
	16	Control	28.06	6.27	
Openness	16	Stuttering	23.50	4.51	$t(30)= -0.64, p=0.522$
	16	Control	24.50	4.21	
Agreeableness	16	Stuttering	31.25	5.90	$t(30)= 2.00, p=0.054$
	16	Control	27.25	5.38	
Conscientiousness	16	Stuttering	34.63	6.24	$t(30)= 2.08, p=0.046$
	16	Control	30.06	6.15	

In line with Bleek et al., (2011) we also find higher scores for Neuroticism and Conscientiousness in the stuttering group compared to controls. About Neuroticism note that we just found significant difference between male experimental and control group. So surprisingly we didn't find significant difference between two groups for this dimension that this might be because of small sample size in comparison with two previous studies, i.e. Bleek et al., (2011) and Iverach et al., (2010). Regarding results from Neuroticism in this study, male adults who stutter are more likely to experience such feelings as anxiety, anger, envy, guilt and depressed mood. Also they might respond more poorly to environmental stress (Matthews, Deary & Whiteman, 2003) and may need for more intensive treatment. In the other hand, as Conscientiousness is related to perfectionism, the persons who stutter are more likely to be more perfectionists. In addition to perfectionism, high Conscientiousness associated with self-discipline, carefulness, thoroughness, self-organization and deliberation (the tendency to think carefully before acting), that seems to be higher for adult who stutter.

4. Conclusion

So people who stutter can benefit from counseling. Following the present results, clinicians might include data on Conscientiousness and Neuroticism to follow an individualized counseling procedure for clients suffering from stuttering. Conscientiousness can have a role in determining treatment procedure. High Conscientiousness in adults who stutter may associated with determination, reliability and an ability to resist temptation and is also a significant predictor of treatment outcome, indicating that the amount of effort an individual puts into treatment, may influence its effectiveness and success (Haghshenas, 2010). Likewise, Neuroticism may also have the capacity to influence treatment outcomes, and may be associated with the need for more intensive treatment. Added to this, it may be more practicable for adult who stutter to be referred to psychologists for mental health and personality assessments in cases where emotional liability and distress are identified (Iverach et al., 2010).

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