Supplemental Material S1. Identification and description of stuttering subgroups.

Four variables were analyzed to identify "stuttering burden":

- Frequency: How often do you stutter at the moment?
    1. Usually several times per sentence
    2. About once every 1-3 sentences
    3. About once every 4-10 sentences
    4. About 5 times a day
    5. Alternately, not every day

- Severity: How much do you stutter? On a scale of 1 to 10, where 1 represents not stuttering and 10 represents extremely severe stuttering ("I can hardly get any words out").

- Affect: How much are you affected by stuttering? On a scale of 1 to 10, where 1 represents not affected and 10 represents extremely affected.

- Anxiety: Indicate how anxious you are while stuttering:
    a. Not anxious
    b. A little
    c. Fairly
    d. Very
    e. Extremely

Table S1.1. Correlation between the four input variables (*n* = 604).

	Frequency	Severity	Affect	Anxiety
Frequency				
Severity	.698**			
Affect	.525**	.693**		
Anxiety	.148**	.260**	.562**	

**$p < .01$.

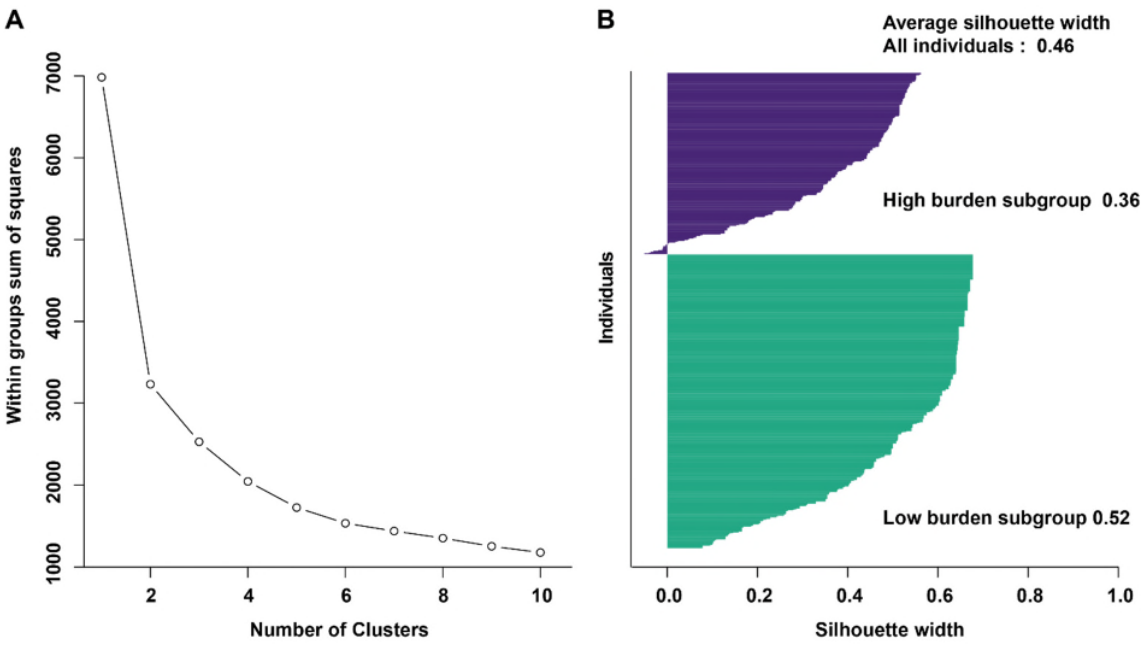

Figure S1.1. Determining the optimal numbers of clusters. A: Scree plot of within-cluster distance for one to ten clusters. The optimal number of clusters is two, as larger numbers of clusters provide a less substantial lowering of within groups sum of squares. B: Silhouette analysis to determine consistency of the two clusters. Silhouette width is a value of how similar an individual is to other individuals in the same cluster, compared to the individuals in the other cluster. Silhouette width can range from -1 to 1, with high values indicating that individuals are well matched to their own cluster. Most individuals are reasonably well assigned to their cluster.

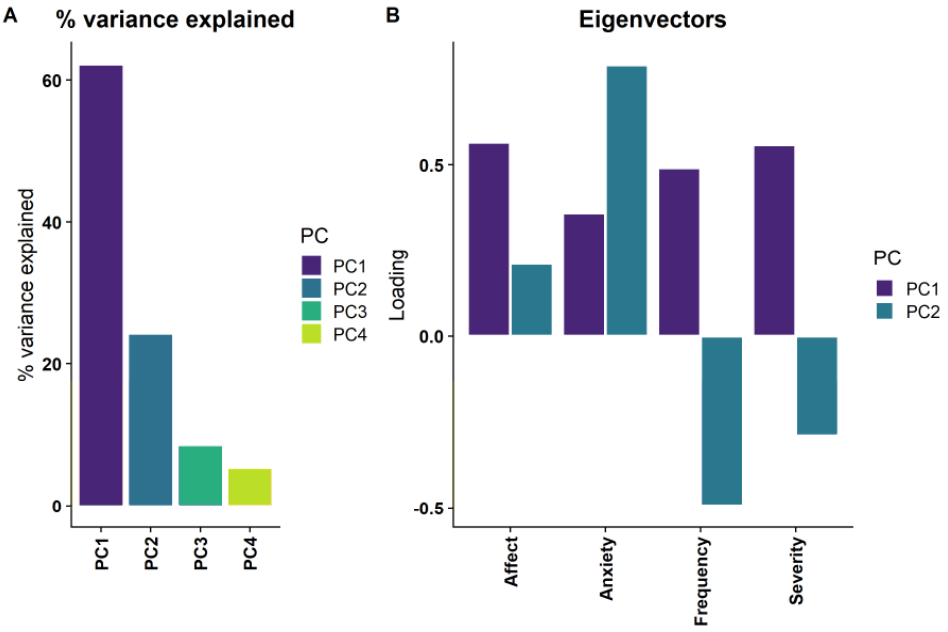

Figure S1.2. Principal component analysis (PCA) of the four input variables. A: The % of variance explained by the first four components. The first two components of the PCA explain the majority of variance in the four input measures. B: The eigenvectors of the first two principal components. The first principal component loads positively on all four input variables, while the second component loads positively onto stuttering affect and anxiety, but negatively onto frequency and severity.

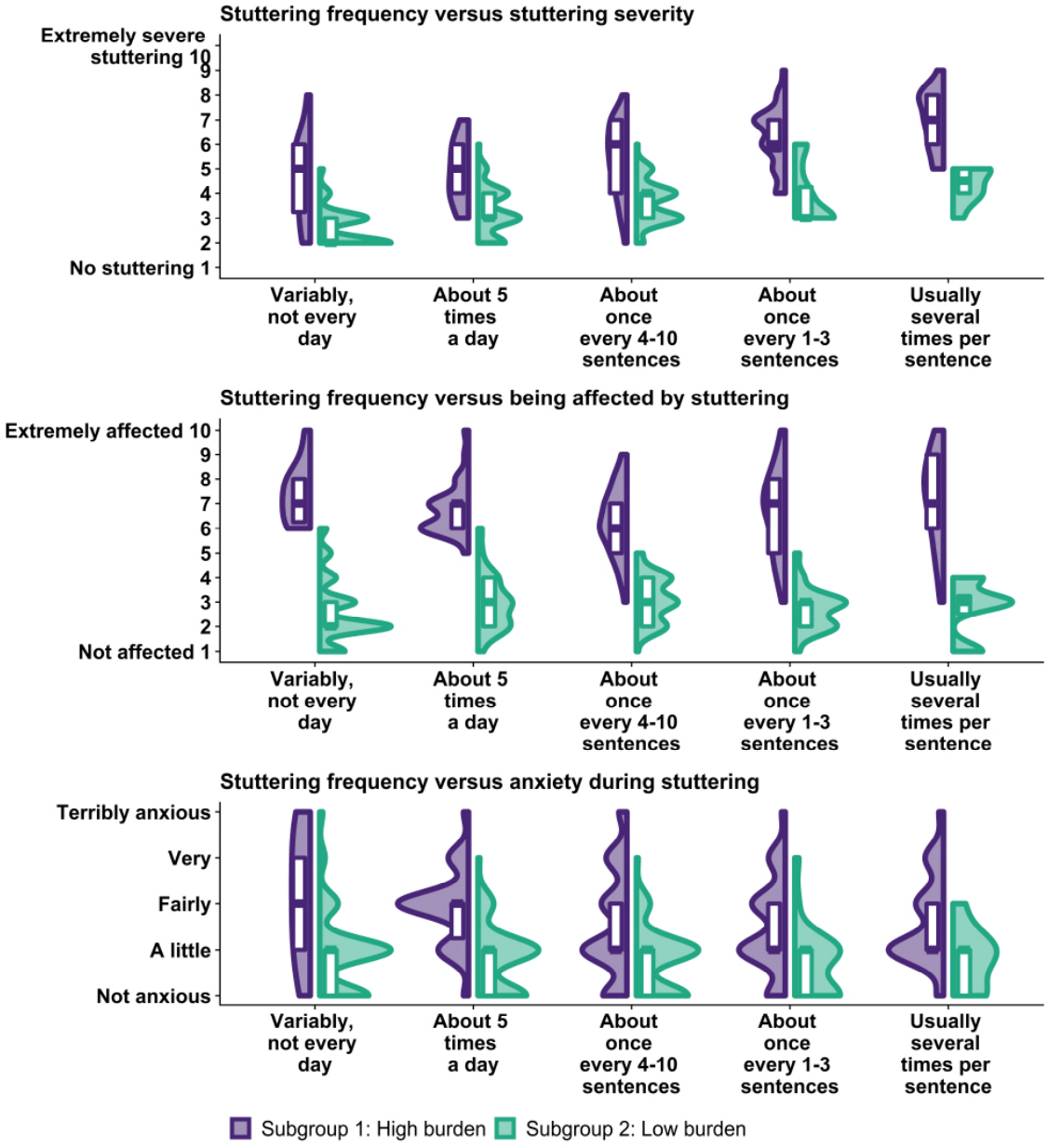

Figure S1.3. Relation between stuttering frequency, severity, affect and anxiety during stuttering, in the high-burden and low-burden subgroups. Violin plots show the distributions of scores for the high-burden subgroup (in purple) and low-burden subgroup (in green). Boxplots show median and first and third quartiles.

Table S1.2. Stuttering phenotype and physical reactions to stuttering at onset of stuttering and at present.

	Subgroups*	**Stuttering at onset**			**Stuttering at present**		
		n	**%**	**Significance**	***n***	**%**	**Significance**
Stuttering phenotype							
Blocks	HB	138	60.0	$p = .205$	181	78.7	$p = .021$
	LB	242	65.1		256	68.8	
Prolongations	HB	114	49.6	$p = .042$	123	53.5	$p < .001$*
	LB	158	42.5		125	33.6	
Repetitions	HB	162	70.4	$p = .833$	182	79.1	$p = .009$
	LB	113	30.4		258	69.4	
Physical reactions							
No physical reaction	HB	35	15.2	$p = .706$	35	15.2	$p < .001$*
	LB	66	17.7		153	41.1	
Sweating, trembling or palpitations	HB	56	24.3	$p = .796$	73	31.7	$p < .001$*
	LB	82	22.0		60	16.1	
Blushing	HB	56	24.3	$p = .796$	56	24.3	$p < .001$*
	LB	82	22.0		43	11.6	
Freezing	HB	46	20.0	$p = .990$	68	29.6	$p < .001$*
	LB	75	20.2		63	16.9	
Making distracting sounds	HB	18	7.8	$p = .250$	20	8.7	$p < .001$*
	LB	17	4.6		11	3.0	
Facial grimaces	HB	87	37.8	$p = .109$	110	47.8	$p < .001$*
	LB	115	30.9		85	22.8	
Head movements	HB	50	21.7	$p = .434$	51	22.2	$p < .001$*
	LB	66	17.7		39	10.5	
Bodily movements	HB	38	16.5	$p = .344$	38	16.5	$p < .001$*
	LB	46	12.4		28	7.5	

Note. HB = high-burden subgroup; LB = low-burden subgroup.
*Significant after correction for multiple testing.

Table S1.3. Means and standard deviations of scores on OASES questionnaire for low- and high-burden subgroup.

	Low-burden group (*n* = 210)		**High-burden group (*n* = 141)**	
OASES-questionnaire (1-5)	***M***	***SD***	***M***	***SD***
General information*	2.53	0.49	2.85	0.46
Reaction of the speaker*	2.28	0.61	2.85	0.64
Daily communication*	1.96	0.57	2.54	0.67
Quality of life*	1.65	0.56	2.30	0.74

*$p < .001$.

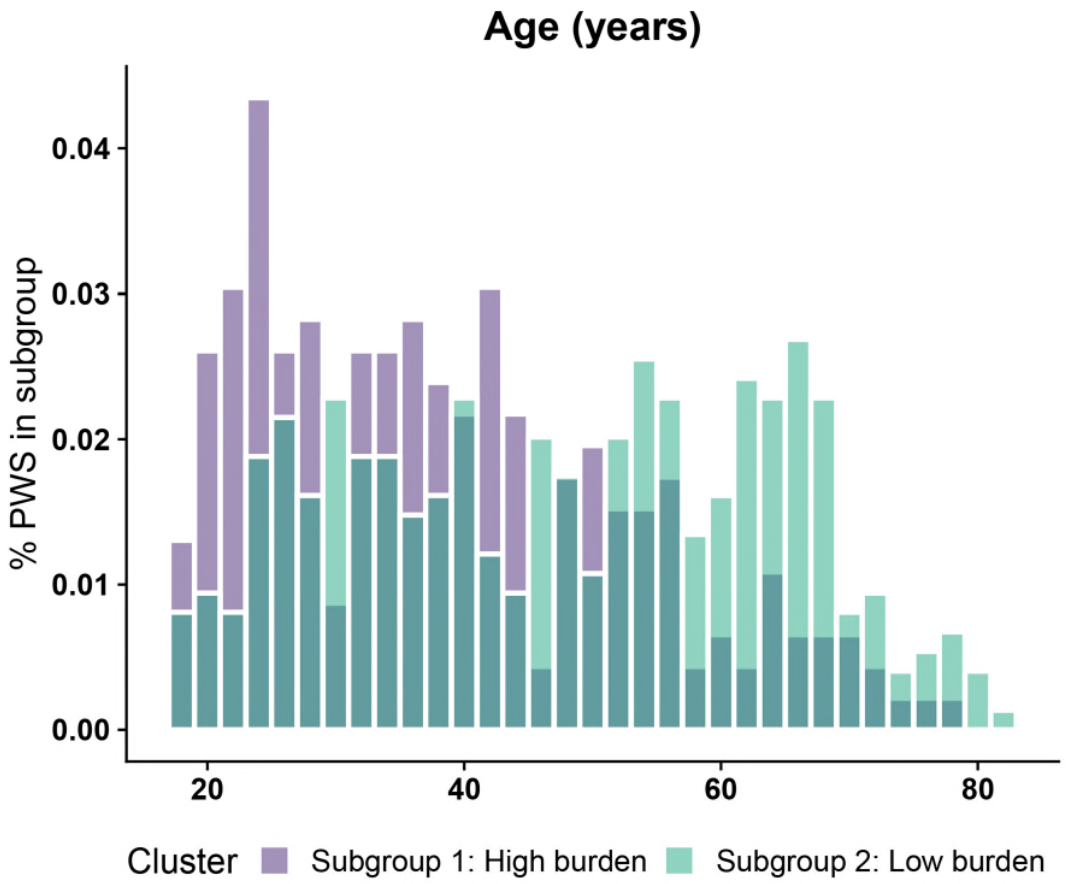

Figure S1.4. Age distribution in the high-burden and low-burden subgroups. Overlaying histograms for high-burden subgroup (in purple) and low-burden subgroup (in green) are shown for age, with overlap between the subgroups shown in dark green).