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## COMPREHENSIVE DIAGNOSIS OF POLISH SCHOOL-AGE CHILDREN WHO STUTTER: NORMATIVE AND PSYCHOMETRIC INVESTIGATION OF THE BEHAVIOR ASSESSMENT BATTERY

KOMPLEKSOWA DIAGNOZA JĄKANIA  
U POLSKOJĘZYCZNYCH DZIECI W WIEKU  
SZKOLNYM – BADANIA NORMALIZACYJNE  
I PSYCHOMETRYCZNE *BATERII TESTÓW*  
*DO OCENY ZACHOWAŃ (BAB)*

**Keywords:**  
stuttering/stammering,  
diagnosis, children,  
Behavior Assessment  
Battery (BAB)

**Summary:** *The Behavior Assessment Battery (BAB) for Children Who Stutter* is a self-report test investigating the affective, behavioral and cognitive correlates of stuttering. Its subtests gauge a school-age child who stutters' (CWS) level of anxiety and speech disruption in particular speech situations

**Słowa kluczowe:**  
jąkanie, diagnoza,  
dzieci, Bateria testów  
do oceny zachowań  
(BAB)

(SSC-ER: *Speech Situation Checklist – Emotional Reaction* and SSC-SD: *Speech Situation Checklist – Speech Disruption*), the use of coping behaviors (BCL: *Behavior Checklist*) and how a child thinks about his/her speech (CAT: *Communication Attitude Test*). Cross-cultural research with the BAB has pointed to its usefulness as a differential diagnostic tool and that the tests' items lead to treatment targets. This type of multidimensional assessment instrument for children who stutter was previously unavailable in Poland, but its publication is now underway. This article presents the results of normative and psychometric testing related to the adaptation of the Polish version of the BAB.

**Streszczenie:** *Bateria testów do oceny zachowań dla dzieci w wieku szkolnym, które się jąkają* (BAB) to narzędzie diagnostyczne do samooceny afektywnych, behawioralnych i kognitywnych komponentów jąkania. Narzędzie, w skład którego wchodzi cztery podtesty, pozwala na diagnozowanie u jąkających się dzieci w wieku szkolnym różnych aspektów związanych z jąkaniem. Podtesty SSC-ER (*Lista kontrolna sytuacji komunikacyjnych – reakcje emocjonalne*) i SSC-SD (*Lista kontrolna sytuacji komunikacyjnych – zakłócenia w mowie*) oceniają, jaki jest poziom lęku – jakie są reakcje emocjonalne i jakich zakłóceń w określonych sytuacjach mownych doświadcza dziecko. BCL (*Lista zachowań*) – umożliwia identyfikowanie zachowań wykorzystywanych przez dziecko, by radzić sobie z jąkaniem. Z kolei CAT (*Test do badania postaw związanych z komunikowaniem się*) pokazuje, jakie są przekonania dziecka, jak myśli ono o swoim sposobie wypowiedzania się. Międzykulturowe badania BAB potwierdziły przydatność testu jako narzędzia do diagnozy różnicowej oraz możliwość wykorzystania podtestów do formułowania celów terapii. Taki typ wielowymiarowego narzędzia do oceny jąkania u dzieci nie był do tej pory dostępny w Polsce. W artykule zaprezentowano wyniki badań normalizacyjnych i psychometrycznych dokonanych w związku z pracami adaptacyjnymi nad polską wersją BAB (w przygotowaniu do druku).

## Introduction

Stuttering is a fluency disorder with onset occurring during childhood, typically between 2 to 7 years of age. Although stuttering impacts approximately 5% of preschool children, 65-85% of children recover from stuttering by the age of 16. Therefore, the prevalence of stuttering in adulthood is less than 1% (Yairi & Seery, 2011). According to the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5) (American Psychiatric Association, 2013), stuttering is characterized by speech sound repetitions, prolongations, broken words, blocks, circumlocutions and increased physical tension. Motor movements (such as excessive eye blinking, tics, tremors, head jerking and irregular breathing patterns) may also occur with stuttering. The extent to which these physical manifestations are exhibited vary greatly.

In addition, anxiety surrounding the anticipation of a stuttering event may exacerbate the dysfluency. Individuals who stutter have an increased risk of developing social anxiety, especially during adolescence and continuing throughout adulthood (Smith, Iverach, O'Brian, Kefalianos & Reilly, 2014). Especially in adulthood, stuttering can negatively impact quality of life (Craig, 2010; Craig, Blumgart & Tran, 2009). For example, social participation and academic or occupational achievement can be affected due to the resulting emotional challenges (e.g., bullying, shame and insecurity) that accompany stuttering. Therefore, it is highly recommended that stuttering diagnostic procedures involve criteria not only for the identification by the clinician of observable stuttering characteristics, but also clients' report of their experiences (Guitar, 2014; Manning & DiLollo, 2018; Tichenor & Yaruss, 2019; Vanryckeghem, 2007; 2018; Vanryckeghem & Brutten, 2018; Yaruss & Quesal, 2004). When assessing stuttering in children, certain considerations come to mind. Using a dysfluency count as the sole assessment criterion for diagnosing children who stutter (CWS) is not an effective measure, as there is a considerable lack of inter- and intra-rater reliability (Cordes & Ingham, 1999; Ingham & Cordes, 1992). In addition, this diagnostic measure does not take into account the attitudinal, emotional and behavioral reactions that may present in CWS. Therefore, there has been increased awareness to include a more multi-faced diagnostic approach.

One such diagnostic tool is the Behavioral Assessment Battery (BAB) (Brutten & Vanryckeghem, 2003a; 2003b; 2007; Vanryckeghem & Brutten, 2017; 2018; 2020a; 2020b) for children and adults who stutter. Included in the

BAB are standardized and normed test procedures that help the clinician identify children and adults who stutter by determining whether the client's responses fall within or outside the profile of typically fluent speakers. The four procedures include the two sections of the Speech Situation Checklist (SSC), the Behavior Checklist (BCL) and the Communication Attitude Test (CAT and BigCAT). The SSC is used to evaluate a client's self-reported emotional reaction and level of dysfluency given specific situations; the BCL includes the self-reported amount, type and frequency of mal-adaptive avoidance and escape behaviors secondary to stuttering; the BigCAT for adults and the CAT for school-age children are used in assessing an individual's *belief* system or *attitude* toward speech and the act of speaking. The BAB provides clinicians with a client-centered and holistic approach for diagnosis and leads to treatment considerations. The information gained through these self-report measures is important to reach a solid diagnosis leading to personalized treatment. A negative perception of one's speech can increase dysfluency and influence the amount and type of coping responses, and a mal-attitude can interfere with therapy progress. The client-centered approach stemming from the BAB data increase the likelihood of clinical improvement, which outcome can again be gauged through the use of this test battery.

To highlight the importance of client-centered diagnostic and therapeutic procedures, it helps to understand that, until a few decades ago, the affective, adjustive and cognitive aspects of the difficulties of CWS had been given little or no formally measured attention that was data-driven (Brutten, 1975). Many speech-language therapists (SLTs) relied on subjective observation and indirect questioning of CWS and their parents in order to determine if there were speech-associated concerns, anxieties and coping mechanisms at stake.

In Poland, the existing diagnostic tools for stuttering are limited and lack standardization and norms, especially in light of a multi-dimensional approach for diagnosing CWS (Chęćek, 2001; Góral-Półrola & Tarkowski, 2012a; 2012b; Kurkowski, 2003; Tarkowski, 1992; Węsierska & Jeziorczak, 2016). To address this shortcoming at an age close to the onset of stuttering, *the Communication Attitude Test for Preschoolers Who Stutter (KiddyCAT)* was studied in Poland to determine its effectiveness with Polish preschool CWS (Węsierska, Vanryckeghem, Jeziorczak & Wilk, 2014; Vanryckeghem & Brutten, 2015; Węsierska & Vanryckeghem, 2015). The study aimed to compare the communication attitude among Polish-speaking preschool CWS and children who do not stutter (CWNS). The results supported the use of the Polish version

of the *KiddyCAT* (Vanryckeghem & Brutten, 2015). A second study was undertaken to establish normative data for Polish adults who stutter (AWS) and adults who do not stutter (AWNS) using an adapted version of the BAB for Adults, which is currently in press (Węsierska, Vanryckeghem, Krawczyk, Danielowska, Faściszewska & Tuchowska, 2018; Vanryckeghem & Brutten, 2018).

The purpose of the current study was to obtain normative and comparative data for Polish school-age CWS and CWNS using the four BAB subtests. Aside from total score determination and comparison in light of obtaining normative and comparative data, internal reliability and item analysis was conducted in terms of psychometric quality determination.

## Method

**Participants.** Polish-speaking CWS (N = 112; 23 girls and 89 boys) and Polish-speaking CWNS (N = 113; 60 girls and 53 boys) completed the BAB tests. The children ranged in age between 7 and 17 (mean age for the CWS group was 11 years 2 months, while for the CWNS group it was 13 years 1 month). All children who participated in the study were monolingual native Polish speakers. Polish speech-language therapists helped to recruit the participants in the CWS sample. The diagnosis of stuttering was established by those specialists based on analysis of a speech sample and establishing an inclusion criterion of 3% or more stuttering. Stuttering was also confirmed by the parents/guardians. Excluded from the study were children with autism spectrum disorders, specific language impairment, and bilinguals (within the group of CWS, some of them were diagnosed with comorbid speech disorders). Polish teachers and SLTs recruited the CWNS participants. Both groups of participants resided in rural and urban areas across Poland.

**Materials.** The Behavior Assessment Battery-Revised (BAB) (Vanryckeghem & Brutten, 2017; 2020a; 2020b) is a self-report tool that assesses how prevalent situational anxiety and speech disruption is, whether the child thinks negatively about his or her speech, and uses coping behaviors. The BAB consists of four subtests: SSC-ER, SSC-SD, BCL, and CAT.

The Speech Situation Checklist (SSC) describes various speech situations for the participant to report on the extent to which each situation elicits a negative emotional response (SSC-ER) and fluency failure (SSC-SD). The SSC's two components are comprised of the same 40 communication situations. Both test

sections are scored separately. SSC-ER identifies the speaker's anxiety, worry and fear surrounding speaking in particular speech situations. Using a 5-point scale ranging from 1 (not afraid) to 5 (very much afraid), the participants record their emotional response to each situation.

#### SSC-ER Example:

How do you <u>FEEL</u> when you	I am				
1. talk with a new kid in school	Not afraid	A little afraid	More than a little afraid	Much afraid	Very much afraid
2. talk during dinner	Not afraid	A little afraid	More than a little afraid	Much afraid	Very much afraid

The Speech Disruption section (SSC-SD) includes the same situations as the SSC-ER but asks the participant to report the extent of speech disruption (stuttering) for each scenario. The rating scale goes from 1 (no trouble) to 5 (very much trouble). Scores on both sections of the SSC can range from 40 to 200.

#### SSC-SD Example:

How do you <u>SPEECH</u> when you	I have				
9. spell words aloud in class	No trouble	A little trouble	More than a little trouble	Much trouble	Very much trouble
10. talk to a child you don't know	No trouble	A little trouble	More than a little trouble	Much trouble	Very much trouble

The Behavior Checklist (BCL) is composed of behaviors that are secondary to stuttering. The results provide insight into behaviors that a CWS might use as an avoidance or escape device to cope with stuttering. The participant indicates "YES" if a particular coping behavior is used and "NO" if it is not used. The current form of the BCL lists 35 different coping behaviors that school-aged children have used because they *expect* or *are having trouble* getting their *sounds or words to come out* of their mouth, and because they believe that their use will aid in improved fluency. When completing the BCL, a child is asked to indicate whether or not he or she uses a listed behavior as an aid to speech by circling either "YES" or "NO." A score of 1 is given to each item circled "YES," meaning that this behavior is acknowledged as a "speech aid." The total score on the BCL can range from zero to 35.

BCL example:

To help get your sounds or words come out without trouble, <b>do you...</b>	
1. touch your hair?.....	YES..... NO
2. move, touch or shake your head?.....	YES..... NO

The Communication Attitude Test (CAT) allows the clinician to measure the extent to which children reportedly evidence mal-attitude toward speech. It contains 30 statements that children need to evaluate as to whether or not they apply to them. Seventeen CAT items if marked “True” and 13 if marked “False” indicate mal-attitude toward speech. The total score evidences the amount of negative attitude that a child reports regarding his or her own speech. The CAT scores can range from 0 to 30.

CAT example:

1. I don't talk right.....	True..... False
2. I don't mind asking the teacher a question in class.....	True..... False

**Procedure.** For the CWS groups, speech-language therapists with experience working with individuals who stutter administered the BAB to each participant individually. For the CWNS group, teachers and school SLTs administered the BAB to their students. The tests were administered through randomization to eliminate an order effect.

## Results

**Total score analysis.** Table 1 shows the numeric difference between the ER and SD scores of CWNS and CWS. The mean **SSC-ER** score of the sampled CWS (79.12, SD = 27.17) was almost 2 standard deviations above the average speech-associated emotional reactions of the CWNS (mean = 58.60, SD = 12.08). This indicates that the reported negative emotional reactions of the CWS was close to exceeding that of 98% of the CWNS in our representative sample (if considering a two-standard deviation above the CWNS mean as the cut-off point, which is a score of 83). The effect size was large:  $d = .9805$  (CI = .7001/1.2609) (Cohen, 1988). The between-group difference was statistically significant ( $t = 7.225$ ,  $p = .000$ ). In other words, CWS

generally reported significantly more anxiety when speaking in the speech situations listed in the SSC compared to CWNS.

Table 1  
*Measures of Central Tendency and Variation for CWNS and CWS on the Speech Situation Checklist*

	CWNS		CWS	
	SSC-ER	SSC-SD	SSC-ER	SSC-SD
Mean	58.60	54.88	79.12	80.42
SD	12.08	12.21	27.17	28.89
Median	57	52	75	74
Mode	50	40	48	52
Min.	40	40	40	40
Max.	91	90	160	158

Source: own research.

The results of the **SSC-SD** indicate that the same between-group difference existed as with **SSC-ER** (see Table 1). The mean speech disruption score in our sample of CWNS was 54.88 (SD = 12.21) and for CWS it was 80.42 (SD = 28.89). The CWS average was two standard deviations above that of the group of CWNS, a between-group difference in **SSC-SD** scores that is statistically significant ( $t = 8.457$ ,  $p = .000$ ). Using a classic two standard deviation cut-off point, an **SSC-SD** score of 79 or more would support the statement that a respondent reports a level of speech disruption like a CWS would. Also, for **SSC-SD**, the effect size was large:  $d = 1.1572$  (95% CI: .871/1.4434).

The BCL is designed to measure the number of *behaviors* or “speech aids” that an individual uses to cope with the anticipation of speech disruption or its occurrence. These voluntary behaviors are *secondary* to stuttering. Table 2 highlights that CWS report using more “speech aids” than CWNS. The modal or most frequently occurring response was zero for CWNS and 12 for CWS. The mean of the CWS (10.25; SD = 6.76) was significantly higher ( $t = 2.680$ ,  $p = .008$ ) than that of the CWNS (7.95; SD = 6.00), with a moderate effect size of  $d = .3602$  (95% CI: .0931/.6272). The results of these analyses make it clear that the number of speech aids used by CWS and CWNS separate them into two distinct groups.

Table 2  
*Measures of Central Tendency and Variation of the Number of Coping Behaviors Reported by CWNS and CWS on the Behavior Checklist*

	CWNS	CWS
<b>Mean</b>	7.95	10.25
<b>SD</b>	6.00	6.76
<b>Median</b>	7	10
<b>Mode</b>	0	12
<b>Min.</b>	0	0
<b>Max.</b>	23	32

Source: own research.

The data in Table 3 demonstrate that the mean CAT score of the CWS (14.50; SD = 6.54) was statistically significantly higher ( $t = 12.000, p = .000$ ) than the mean score of CWNS (5.57; SD = 4.31). The mean of the CWS was 2.5 SD above that of CWNS and the median and modal scores for the CWS are also substantially above those of their fluent peers. In addition, the effect size was very large of  $d = 1.4539$  (95% CI: 1.1561/1.7518), indicating that CWS and CWNS make up of two different populations as it relates to their speech-associated attitude.

Table 3  
*Measures of Central Tendency and Variation for CWNS and CWS on the CAT*

	CWNS	CWS
<b>Mean</b>	5.57	14.50
<b>SD</b>	4.31	6.54
<b>Median</b>	4	14
<b>Mode</b>	2	14
<b>Min.</b>	0	1
<b>Max.</b>	18	28

Source: own research.

A discriminant function analysis for the three BAB tests also highlights their power in differentiating CWS from CWNS. For SSC-ER, the discriminant equation accurately identified 71% of the CWS and 91% of the CWNS, with

an overall accuracy of 81%. The leave-one-out cross-validation overall accuracy rate for the two groups was 72%. For SSC-SD, 74% of the CWS and 95% of the CWNS were accurately separated, overall with 86% accuracy. Cross-validation revealed an overall accuracy rate of 77%. Discriminant function analysis of the BCL items correctly identified 69% of the CWS and 80% of the CWNS, with an overall accuracy of 74%. Cross-validation correctly identified 67% of the grouped cases. Also, the CAT items were able to correctly identify 85% of the CWS and 94% of the CWNS, overall, with 90% accuracy. The leave-one-out cross-validation results indicate an overall accuracy of 87%.

Within-group gender analysis. For the SSC-ER, females in the CWS sample scored slightly higher (mean = 85.17; SD = 27.93) compared to the males (77.53; SD = 27.06), a difference that was not statistically significant ( $t = 1.194$ ,  $p = .235$ ). The mean ER scores for CWNS females (60.03; SD = 12.28) and CWNS males (57.13; SD = 11.98) reflected a similar pattern, with females scoring slightly higher than the males, but not significantly so ( $t = 1.258$ ,  $p = .211$ ). These SSC-ER results indicate that females in both groups did not score significantly higher in regard to negative emotional reactions compared to the males. The SSC-SD mean for the sample of females who stuttered was 81.09 (SD = 28.71), while the average for males who stuttered was 80.25 (SD = 29.27). Also, this difference did not prove to be statistically significant ( $t = .120$ ,  $p = .904$ ). In the CWNS sampled, the mean SD score of 55.37 (SD = 12.37) for the females and 54.00 (SD = 11.77) for the males was not statistically significantly different ( $t = .599$ ,  $p = .551$ ). Therefore, gender did not significantly impact the SSD-SD scores of CWS and CWNS.

In comparing the results of the sampled females to males on the BCL subtest, the mean number of coping responses of the females who stuttered was 11.0 (SD = 5.94) and 10.01 (SD = 7.00) for the males. For the CWNS, the average number of coping behaviors reported was 8.24 (SD = 5.94) for the females and 7.44 (SD = 6.12) for the males. The number of speech aids that the boys and girls reported did not prove to be statistically significant for either the CWS ( $t = .621$ ,  $p = .536$ ) or the CWNS ( $t = .687$ ,  $p = .494$ ).

For the CWS, the mean CAT score for the females was 17.61 (SD = 5.84) and for the males it was 13.68 (SD = 6.53). This time, the between-gender difference was statistically significant ( $t = 2.622$ ,  $p = .010$ ). The results indicate that female CWS reported significantly more negative speech-associated attitude than the males. For the CWNS, the females scored an average of 5.11 (SD = 3.99) and males an average of 6.14 (SD = 4.67); these scores did not

differ significantly ( $t = 1.237$ ,  $p = .219$ ). Thus, gender did have a significant impact on the CAT scores of the CWS, which differs from previous findings with the CAT.

Table 4

*SSC-ER, SSC-SD, BCL and CAT total scores for female and male CWNS and CWS*

	CWNS		CWS	
	Females	Males	Females	Males
<b>SSC-ER</b>	Mean = 60.03 SD = 12.28	Mean = 57.13 SD = 11.98	Mean = 85.17 SD = 27.93	Mean = 77.53 SD = 27.06
<b>SSC-SD</b>	Mean = 55.37 SD = 12.37	Mean = 54.00 SD = 11.77	Mean = 81.09 SD = 28.71	Mean = 80.25 SD = 29.27
<b>BCL</b>	Mean = 8.24 SD = 5.94	Mean = 7.44 SD = 6.12	Mean = 11.0 SD = 5.94	Mean = 10.01 SD = 7.00
<b>CAT</b>	Mean = 5.11 SD = 3.99	Mean = 6.14 SD = 4.67	Mean = 17.61 SD = 5.84	Mean = 13.68 SD = 6.53

Source: own research.

**Item Analyses.** All BAB tests demonstrate a solid internal reliability. The Cronbach alpha correlations for the SSC tests were an excellent .96 for the CWS. For the CWNS, they were .90 and .92 for SSC-ER and SSC-SD, respectively. The BCL's internal reliability was .87 for both groups and for the CAT it was .81 (CWS) and .87 (CWNS). For both sections of the SSC, all items correlated significantly with the total score of the CWS. All SSC-SD items differentiated CWS from CWNS to a statistically significant extent. For SSC-ER, this was not the case for items 2 and 6. Also for the BCL, all items correlated significantly with the CWS' total score and differentiated both groups. The same holds for the CAT items, which all correlated significantly with the total score. Items 14, 23 and 29 did not differentiate CWS from CWNS but were retained in the test because of their clinical importance.

## Discussion and conclusion

The four BAB tests (SSS-ER, SSC-SD, CAT and BCL) are capable of differentiating CWS from CWNS. Compared to CWNS, CWS report a significant amount of anxiety and speech disruption in specific situations, negative speech-associated thinking and the use of a significant amount of coping behaviors.

In addition, the discriminant analysis was high for all tests. The results of this study confirmed the findings of previous internationally based investigations which indicated that CWS in general reported statistically significantly more speech-related anxiety and speech disruption, use of coping behaviors and speech-specific negative attitude compared to CWNS (Bernardini, Vanryckeghem, Brutton, Cocco & Zmarich, 2009; Brutton & Vanryckeghem, 2003b; 2007; Gačnik & Vanryckeghem, 2014; Jelčić Jakšić & Brestovci, 2000; Kawai, Healey, Nagasawa & Vanryckeghem, 2012; Vanryckeghem & Brutton, 2017; 2020b). A limitation of this study is the fact that speech disorders (e.g., articulation and phonological) were present in some participants and may have had an impact on the results.

As in previous investigations, the SSC-ER, SSC-SD, CAT and BCL were found to have a high internal reliability (Brutton & Vanryckeghem, 2003b; 2007; Vanryckeghem & Brutton, 2017; 2020a). For the group of CWS, all items correlated significantly with the total SSC-ER, SSC-SD, CAT and BCL score. As such, it can be said that the BAB sub-tests have solid psychometric qualifications.

Specifically as it relates to the BCL, based on the data, both CWS and CWNS may use speech aids, but the reason for their use may differ. CWS are able to mask the difficulty that they anticipate having, or are having, by using coping behaviors such as pausing before a troublesome word. It is the specific *motivation* for the use of speech aids that tends to differentiate the children who are typically fluent and those who stutter. While the CWNS may use speech aids, for instance, to help emphasize an idea, hold the listener's attention, correct a linguistic error or when searching for a word, CWS tend to use speech aids more intentionally as a strategy to deal with moments of stuttering. They can also be used by CWS as a way to get out of a dysfluency. As a result, the CWS may, for example, pause before saying certain sounds or words, change particular sounds or words, or leave out specific sounds or words. For this reason, the BCL provides a detailed understanding of which coping behaviors a CWS uses for the purpose of diagnosis and for the establishment of treatment targets.

Gender does not affect the BAB scores except for the CAT, where the female CWS scored significantly higher compared to the males. In previous research, a descriptive, though non-significant, difference was found to exist for this BAB sub-test. For SSC-ER, SSC-SD and BCL – in both the CWS and CWNS groups – females scored descriptively, though not significantly, higher than males, a finding that conforms to other BAB investigations.

The BAB gives the clinician a unique insight into a client's negative emotional reaction and extent of speech disruption during speech situations, the degree of negative attitude associated with his or her speech impediment, and the frequency and types of coping behaviors used in anticipation or during stuttering. Taking this information together, the clinician can augment his or her clinical observations with the client's self-report and strengthen the outcome of the differential diagnosis. In addition, the content of the BAB tests will help determine appropriate and personalized therapy targets. The way a client responds to the BAB sub-test items allows the clinician to create an individualized roadmap for treatment. The BAB's holistic assessment takes into consideration the affective, behavioral and cognitive components of stuttering, in addition to using measures of dysfluency type and frequency, to reach individualized treatment approaches. This is especially relevant in Poland, where traditional stuttering diagnosis and therapy for school-age children typically focuses solely on improving fluency through use of fluency shaping techniques and places less or no emphasis on targeting the affective and cognitive aspects of stuttering. The Polish version of the BAB will assist therapists to expand on the scope of practice with stuttering children. By using this evidence-based assessment tool, they can expand their assessment base to come to a solid diagnostic decision. In addition, as mentioned before, the content of each test will assist in determining the targets for treatment including behavioral, emotional and attitudinal dimensions present in the CWS.

No client has the same areas of difficulty – including differences in the emotional reactions and dysfluency levels in varying situations, types of coping behaviors and beliefs about one's speech. The SSC will guide the clinician in identifying the speech situations that need to be addressed in light of desensitization. The BCL provides an inventory of coping behavior that the client employs and need to be reduced in order for improved fluency to be achieved. The client's mal-attitude about speech can be addressed and targeted with the help of the CAT's items. Although the goal of therapy remains the same for stuttering clients (to empower the client to understand their stuttering and to minimize its impact on his or her life), the specifics are different and need to receive the individualized attention of the clinician. Knowing this, the BAB can not only be used to establish pre-and post- treatment outcome data as it relates to the affective, behavioral and cognitive components of stuttering, but also provides the clinician with a "GPS" or roadmap for each treatment session. In conclusion, the Polish version of the BAB is a reliable and valid diagnostic

tool for comprehensive stuttering assessment and provides an opportunity to explore the disorder from the perspective of the individual who stutters.

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