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Investigating Stuttering Awareness in Children Who Stutter: A Cross-sectional Study Using Direct Questions

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ABSTRACT

Background: Stuttering is a fluency disorder that begins in childhood. Parents and physicians may sometimes underestimate the condition if the child is unaware of their own stuttering, leading to a "wait-and-see" approach without early intervention or prevention.

Aim: This study aimed to assess the awareness of stuttering among children who stutter.

Methods: We enrolled 106 children aged 5–12 years with stuttering. The average frequency of stuttering was 6.6% among participants. The following four questions were asked regarding their perceptions of stuttering and experiences of teasing/bullying: “Do you sometimes repeat words or get stuck while speaking?” and “Has anyone asked you why you speak that way?” “Has anyone imitated the way you speak?” and “Has anyone laughed at your speech?” The percentage of children who answered ‘yes’ to each question was calculated.

Results: Of the 106 participants, 60.3% reported experiencing teasing or bullying, 84.9% perceived their own stuttering, and 89.6% answered "Yes" to at least one of the four questions. Significant differences in the perception and experience of teasing and bullying were observed among children aged 8–10 years old.

Conclusion: Including questions about perception in addition to teasing/bullying helped identify children’s awareness of their stuttering. These questions may be useful for promoting early intervention and preventing disadvantages associated with stuttering.

Keywords: Awareness, Bullying, Childhood-onset fluency disorder, Stuttering, Teasing.

Introduction

Stuttering, also known as childhood-onset fluency disorder, is a common neurodevelopmental speech disorder,[1] affecting 5–11.2% of children aged 2–4 years.[2-4] The natural recovery rate of stuttering within four years of onset is approximately 80%,[5,6] while the prevalence of stuttering in elementary school-aged children is approximately 1%.[7] Persistent stuttering can lead to risks such as bullying,[8-10] social anxiety disorder,[11-15] and school refusal.[15] In adulthood, stuttering negatively affects quality of life,[16,17] social status,[18] and income.[19]

Parents often attempt to prevent stuttering in their children. Some mothers may feel guilty and believe that their stuttering is a result of their parenting style.[20] This belief stems from the outdated diagnosogenic theory of stuttering, which suggested that making a child aware of their disfluent speech as "stuttering" caused the condition, with stuttering once thought to be entirely environmental.[21,22] However, twin studies have since shown that 80% of stuttering cases are influenced by genetic factors,[23] including genes such as *GNPTAB*, *GNPTG*, *NAGPA*, and *AP4E1*.[24-26] The current consensus is that stuttering is primarily driven by genetic rather than environmental factors. Therefore, therapists and parents should avoid a "wait and see" approach and instead engage with children who stutter regarding early intervention and the prevention of disadvantages caused by stuttering.

Recently, various treatments have been developed for childhood stuttering, including the Lidcombe Program,[27] Westmead Program,[28] RESTART-DCM,[29] MINI-KIDS,[30] and Palin parent–child interaction therapy.[31] Research has confirmed that the Lidcombe Program, which involves making children aware of their stuttering, does not have any adverse effects on the children.[32] Various approaches can be adopted for school-aged children, including bullying prevention,[10,33] direct training to reduce stuttering,[34] and psychological support.[35]

Various methods have been published to confirm whether children who stutter are aware of it. Children as young as three years old who stutter have been shown to recognize their difficulty in speaking.[36,37] One method of asking children if they are aware of their stuttering involves using a puppet who speaks disfluently.[5,37] Another method involves parents observing their child and answering questions assessing the child's awareness of stuttering (e.g., The child makes a remark about their speech, or The parents are sure of the child's awareness based on their expressions, etc.).[38,39] The KiddyCAT is a 12-question survey that measures the extent to which young children are aware of their stuttering (for example, "Do words sometimes get stuck in your mouth?" or "Do you think you talk properly?").[40]

In a previous study, we asked children aged 3–12 years who stutter about their experiences of being imitated, criticized, or laughed at, finding that children aged five and above reported unpleasant experiences.[10] Imitation, questioning, and laughter are negative experiences associated with teasing and bullying. Discussing the prevention of these unpleasant experiences with children is clinically useful.

While the necessity for physicians, who are easily approachable by parents, to conduct stuttering screenings has previously been indicated,[41-43] there is a possibility that concerns may be underestimated if only the speech behavior of stuttering is evaluated. While we have previously reported the utility of directly asking children who stutter about their experiences of imitation, questioning, and laughter,[10] there are also children who suffer from stuttering without experiencing teasing or bullying. Therefore, we recently designed new questions to facilitate early intervention and prevention by speech-language pathologists. This study aimed to verify the clinical usefulness of these questions.

Methods

PARTICIPANTS

This study included 106 children with a primary complaint of stuttering who visited the Department of Otorhinolaryngology at Kyushu University Hospital

between 2012 and 2023. The long duration (2012–2023) reflects the effort to collect a large and diverse enough sample at a single center to enable meaningful age-wise comparisons. The cohort included 13 five-year-olds, 15 six-year-olds, 21 seven-year-olds, 20 eight-year-olds, 14 nine-year-olds, 11 ten-year-olds, 6 eleven-year-olds, and 6 twelve-year-olds, of whom 79 were male and 27 were female. Stuttering was assessed using the Japanese Standardized Test for Stuttering, and stuttering frequency was calculated by dividing the number of core stuttering symptoms by the total number of syllables per Japanese word unit or "bunsetsu" and multiplying the result by 100.[44] The average frequency of stuttering was 6.6% (range: 0%–50%) among participants.

PROCEDURE

During the initial consultation at Kyushu University Hospital for the chief complaint of stuttering, the first author verbally asked the children four questions, for which an answer of "yes" indicated awareness, and an answer of "no" or "I don't know" indicated they were not aware. The following four questions regarding awareness were asked in a random order:

Direct question regarding the perception of stuttering (abbreviated as "perception (Q1)")

Q1. Do you sometimes repeat words or get stuck while speaking? (For example, ggggood morning)

Direct questions about teasing/bullying related to stuttering (abbreviated as "teasing/bullying (Q2-4)")[10]

Q2. Has anyone asked you why you speak that way?

Q3. Has anyone imitated the way you speak?

Q4. Has anyone laughed at your speech?

We only used data from participants who answered all four questions. Further, to avoid any misunderstanding of terms, "awareness" refers to questions 1 to 4, "perception (Q1)" refers only to question 1, and "teasing/bullying (Q2-4)" refers to questions 2 to 4 (Table 1). This was a cross-sectional study. All data were collected during the initial hospital consultation, and participants were not followed over time.

ITEMS FOR CONSIDERATION

The following items were considered: overall differences between perception (Q1) and teasing/bullying (Q2-4), trends in perception (Q1) and teasing/bullying (Q2-4) by age, and characteristics of children who were unaware (Q1-4) of their stuttering.

STATISTICS

Statistical analyses were performed using JMP 17 statistical software (SAS Institute Inc., Cary, NC, USA). Paired t-tests were used to compare trends in perceptions (Q1) and teasing/bullying (Q2-4) by age group. The frequency of stuttering was compared between groups with and without awareness (Q1-4) of stuttering, using t-tests.

ETHICS

This study was approved by the Ethics Committee of Kyushu University (2022-154), and conducted in accordance with the Declaration of Helsinki.

Results

OVERALL DIFFERENCES BETWEEN PERCEPTION (Q1) AND TEASING/BULLYING (Q2-4)

Table 2 presents the relationship between children's perception of their own stuttering (Q1) and their experiences of teasing or bullying related to speech (Q2–4). Among the 106 participants, 90 children (84.9%) reported awareness of their stuttering (Q1), while 16 children (15.1%) did not perceive their own stuttering. Of the 90 children who were aware of their stuttering (Q1), 59 children (65.6%) also reported experiencing teasing or bullying (Q2–4), whereas 31 children (34.4%) did not report such experiences. In contrast, among the 16 children who did not perceive their own stuttering, only 5 children (31.3%) reported being teased or bullied, and the remaining 11 children (68.8%) did not report any teasing or bullying. These findings suggest a notable relationship between stuttering awareness and experiences of teasing or bullying. Specifically, children who were aware of their stuttering were more likely to report being teased or bullied than those who were unaware.

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However, it is important to note that not all children who perceived their stuttering experienced bullying, and some children who did not perceive their stuttering still reported being teased—highlighting the complex and multifaceted nature of children's social experiences with stuttering. A chi-square test of independence may be conducted to further examine whether the observed differences between the groups are statistically significant (not shown here), but descriptively, the data indicate that perception of stuttering tends to co-occur with reports of teasing/bullying.

Table 1. The four questions children were verbally asked regarding stuttering awareness.

Perception (Q1) of stuttering	Do you sometimes repeat words or get stuck while speaking? (For example, ggggood morning)
Teasing/Bullying (Q2-4)	Has anyone asked you why you speak in that way?
	Has anyone imitated the way you speak?
	Has anyone laughed at your speech?

Table 2. The Relationship Between Perception of Stuttering and Teasing/Bullying

	Perception (Q1) of stuttering	No perception (Q1) of stuttering	Total
Teasing/Bullying (Q2-4)	59	5	64 (60.4%)
No Teasing/Bullying (Q2-4)	31	11	42 (39.6%)
Total	90 (84.9%)	16 (15.1%)	106 (100%)

Footnote: Perception (Q1) refers to children's awareness of their own stuttering as assessed by the question: "Do you sometimes repeat words or get stuck while speaking?"

Teasing/Bullying (Q2–4) refers to reported experiences of being questioned, imitated, or laughed at due to speech disfluency. Percentages in parentheses represent the proportion of participants within the total sample (N = 106).

TRENDS IN PERCEPTION (Q1) AND TEASING/ BULLYING BY AGE (Q2-4)

Figure 1 illustrates the age-wise distribution of children who reported awareness of their stuttering (perception, Q1) and those who reported experiences of teasing or bullying (Q2–4). The data are shown as the proportion (%) of children within each age group (N=106 total participants). At age 5, 46.2% of children reported perceiving their own stuttering, while only 30.8% reported experiencing teasing or bullying. By age 6, the perception rate increased to 80.0%, and the teasing/bullying rate rose to 60.0%. At age 7, 76.2% of children perceived their stuttering, and 66.7% reported teasing/bullying experiences. From age 8 onward, the proportion of children perceiving their stuttering reached 95.0% or higher, with a peak of 100% reported among children aged 9 through 12. However, the proportion of children

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experiencing teasing or bullying did not follow the same upward trend. At age 8, 70.0% reported teasing/bullying, but this percentage declined slightly at ages 9 (57.1%), 10 (54.5%), and 11 (66.7%), before increasing again at age 12 (83.3%). These findings demonstrate a clear trend: awareness of stuttering increased sharply with age, reaching near-universal levels by age 8. In contrast, experiences of teasing or bullying did not increase proportionally and showed greater variability across age groups. Comparisons of perception (Q1) and teasing/bullying (Q2-4) within the same age group revealed significant differences at ages 8 (p=0.021), 9 (p=0.0081), and 10 (p=0.016) but no significant differences at ages 5 (p=0.33), 6 (p=0.19), 7 (p=0.49), 11 (p=0.017), and 12 (p=0.36).

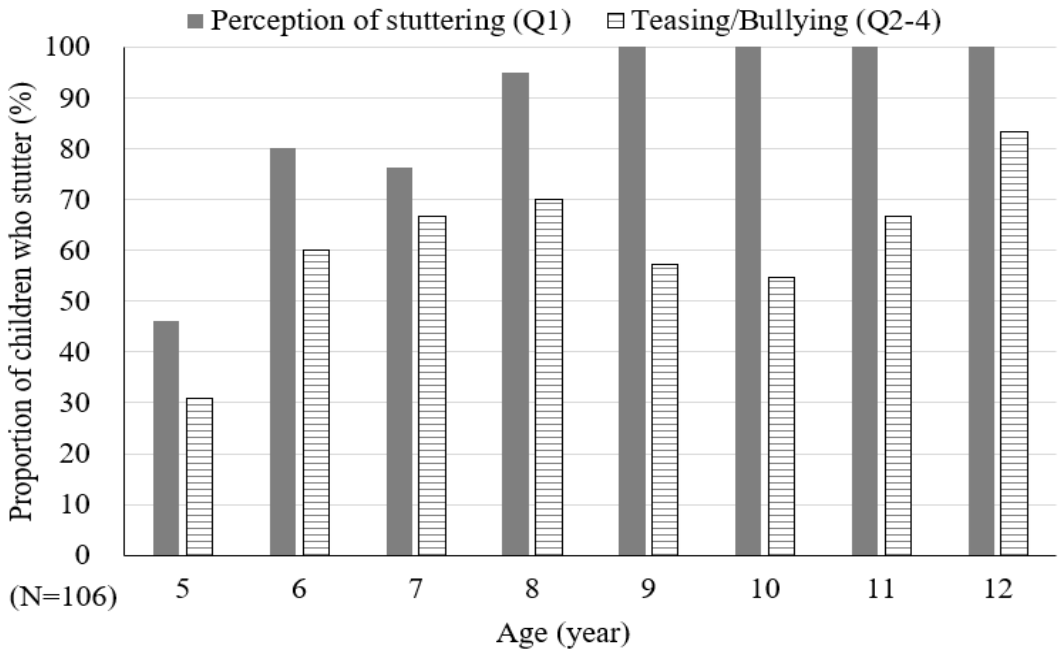

Figure 1. Distribution of Perception and Teasing/Bullying Across Different Ages

Footnote: Perception of stuttering (Q1) refers to children's self-awareness of their speech difficulties, as assessed by the question: "Do you sometimes repeat words or get stuck while speaking?" Teasing/Bullying (Q2–4) refers to experiences of being asked about, imitated for, or laughed at due to their speech. Bars represent the proportion (%) of children within each age group (ages 5–12) who answered "Yes" to the respective questions.

COMPARISON OF STUTTERING FREQUENCY BETWEEN CHILDREN WITH AND WITHOUT AWARENESS OF THEIR STUTTERING (Q1–4)

The average frequency of stuttering in the group without awareness (Q1-4) was 2.1% (range: 0% to 12%), whereas that in the group with awareness (Q1-4) was 7.7% (range: 0% to 50%). Overall, there was no statistically significant difference between groups with and without awareness (Q1-4) of stuttering (p=0.074).

Discussion

The rate of teasing/bullying (Q2-4) observed in the present study (60.3%) was consistent with that in previous studies.[10,46] In one study based on the 19-item Teasing/Bullying Questionnaire for Children who Stutter (TBQ-CS), Langevin et al. previously reported that nearly 60% of children aged 7–15 years who stutter frequently experience bullying behavior. We also found in our previous research that all children aged 5 and older who reported being mimicked, pointed out, or laughed at had negative experiences,[10] which provides an opportunity to openly discuss preventive measures with the children.

Regarding the perception questions, 84.9% of the children answered "Yes." When considering all four questions on teasing/bullying and perception, 89.6% answered "Yes," highlighting the usefulness of asking about perceptions in addition to teasing/bullying.

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Boey et al. used a different approach to investigate whether parents observe and are aware of their children's stuttering in children aged two to seven years. The study reported that around 80% of children aged 5 to 7 are aware of their stuttering.[38] Our data also showed that approximately 50% of 5-year-olds were aware of their stuttering. However, approximately 80% of 6- and 7-year-olds were aware of this. This confirms that even young children are aware of their stuttering. Early interventions for childhood stuttering may be initiated using therapeutic interventions, such as the Lidcombe Program,[27] Westmead Program,[28] RESTART-DCM,[29] MINI-KIDS,[30] and Palin Parent-Child Interaction Therapy.[31] Identifying stuttering awareness (Q1-4) in elementary school children can also motivate the initiation of approaches to prevent bullying,[10,33] directly reduce stuttering,[34] and support psychological characteristics.[35] Of course, children who are unaware of their stuttering need bullying prevention and similar support.

Notable results were obtained regarding the trends in perceptions (Q1) and teasing/bullying (Q2-4) by age. For example, the perception was 100% for those aged 9 and older. When comparing perception (Q1) and teasing/bullying (Q2-4), a significantly higher percentage of children between the ages of eight and ten answered "Yes" to the perception questions (Q1). However, between the ages of 5 and 7, the perception (Q1) of stuttering was higher than that of teasing/bullying (Q2-4), but this difference was not statistically significant. Possible reasons for this include the following: as children age, their recognition of nonfluency develops during early childhood[36,37]. Additionally, for children aged 5–7 years, teasing or bullying may be strongly related to the awareness of stuttering. The lack of significant differences between perception (Q1) and teasing/bullying (Q2-4) at ages 11 and 12 was likely because of the small number of participants, as there were only six children in each of these age groups.

Significant differences were observed in the comparison between perception (Q1) and teasing/bullying (Q2-4) at ages 8, 9, and 10 years. While perception (Q1) remained close to 100%, the percentage for teasing/bullying (Q2-4) decreased, which can be explained by two possible reasons. First, starting at eight years of age, children begin to hide their stuttering (e.g., by substituting words) and make efforts to avoid stuttering at school[47] so that their classmates may not notice it. Second, at 8 years of age, children are in the second or third grade, and their interest in how children who stutter speak may decrease, possibly leading to a reduction in teasing/bullying (Q2-4).

CHARACTERISTICS OF CHILDREN WHO ARE UNAWARE OF THEIR STUTTERING

There was no statistically significant difference in the frequency of stuttering between children who were aware and those who were unaware of their stuttering (Q1-4) ($p=0.074$). This indicates two key points. First, many children recognize their stuttering even if its frequency is low or absent during consultations. Stuttering may still manifest at home or in kindergarten, affecting children's perception (Q1) of their stuttering as well as teasing or bullying (Q2-4). There is no Japanese version of the widely used Stuttering Severity Instrument-4 (SSI-4) and unique assessment methods are used because of the characteristics of the Japanese language. However, the reliability of the SSI-4 has been questioned because of its high variability,[48] while its measurement reliability has been criticized[49]. This result suggests that even if listeners perceive stuttering as mild, they may still experience significant distress.[50]

Second, one 5-year-old child with clearly audible stuttering (frequency of 12%) answered "No" to awareness questions. However, it should be noted that she had been repeatedly hospitalized because of illness until the age of four years and had not attended kindergarten, where she would have experienced group life, which may have resulted in an underdeveloped recognition of her stuttering.[36,37]

The children who answered the four questions responded calmly with "Yes" or "No" and did not show any negative emotions toward the questions,

thus confirming that these questions were useful for identifying awareness of stuttering in children aged 5 and older. While some may worry about the psychological impact of directly asking these four questions, all the children were able to answer them calmly. The Communication Attitude Test (CAT) has been widely used to investigate speech attitudes among elementary school children who stutter[51]. The CAT includes questions such as, "Sometimes words will stick in my mouth when I talk" and "Some kids make fun of the way I talk," which are similar to our verbal questions. Additionally, the KiddyCAT, designed for young children, includes questions such as "Do words sometimes get stuck in your mouth?" and "Are words hard for you to say?" that are similar to the questions used in the present study.[40] Therefore, it seems unnecessary to be overly concerned with asking the four questions used in this study.

This study has several limitations. First, we excluded fluently speaking children who did not stutter. This may be important, as in one study, 5% of the children without stuttering responded that they spoke in a stuttering manner when shown a puppet that stutters.[37] The KiddyCAT, which includes 12 items related to stuttering in young children, showed overlapping scores between children who did not stutter (CWNS) and those who stutter (CWS); however, there were significant differences between the groups.[39] Second, there is a possibility of false positives where children verbally answer "Yes" to the perception questions, even if they are not truly aware of the correct answers. To minimize false positives, if a child answered "Yes" to the perception question, we asked whether they repeated it or became stuck more often at home or in kindergarten. Similarly, if they answered "Yes" to the teasing/bullying questions, we would ask "Who imitates you?" to obtain more specific information and reduce false positives. Third, the first author asked the 106 participants all four questions. Future studies should address whether the same reproducibility is observed when doctors and parents ask questions.

Fourth, we did not confirm whether the participant had coexisting conditions, such as autism spectrum disorder or attention deficit hyperactivity disorder. Fifth, since no video or audio recordings were made in this study to assess stuttering frequency, it was necessary to evaluate multiple individuals and verify the inter-rater agreement. Sixth, in this study, we directly asked about awareness (Q1-4) of stuttering at the time of the initial hospital visit, with stuttering as the chief complaint. However, the reasons for seeking medical consultation vary, and a detailed examination of these reasons has not yet been conducted. Seventh, this study was a survey of children who presented to a single hospital with stuttering as the primary complaint. This study was conducted in a non-English-speaking country and needs to be replicated in several hospitals to ensure reproducibility and generalizability.

Conclusion

Among the children enrolled, 60.3% responded affirmatively to questions about teasing/bullying, while 84.9% were found to perceive themselves stuttering. Overall, 89.6% answered "Yes" to at least one of the four questions. A comparison of perception and teasing/bullying within the same age group revealed significant differences between the ages 8 of 10. Overall, by asking questions about perceptions, in addition to teasing/bullying, we were able to identify more children who were aware of their stuttering. These questions could be useful for early intervention and prevention of the disadvantages of stuttering.

Conflicts of Interest:

The authors declare no conflicts of interest.

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References:

1. Battle DE. Diagnostic and statistical manual of mental disorders (DSM). *CoDAS.* 2013;25:191-192.
2. Mansson H. Childhood stuttering. *J Fluency Disord.* 2000;25:47-57.
3. Reilly S, Onslow M, Packman A, et al. Predicting stuttering onset by the age of 3 years: A prospective, community cohort study. *Pediatrics.* 2009; 123:270-277.
4. Reilly S, Onslow M, Packman A, et al. Natural history of stuttering to 4 years of age: A prospective community-based study. *Pediatrics.* 2013;132:460-467.
5. Yairi E, Ambrose NG. Early childhood stuttering I: persistency and recovery rates. *J Speech Lang Hear Res.* 1999;42:1097-1112.
6. Yairi E, Ambrose N. Early childhood stuttering. Austin: Pro-Ed, Inc.; 2005.
7. Yairi E, Ambrose N. Epidemiology of stuttering: 21st century advances. *J Fluency Disord.* 2013;38:66-87.
8. Murphy WP, Yaruss JS, Quesal RW. Enhancing treatment for school-age children who stutter II. Reducing bullying through role-playing and self-disclosure. *J Fluency Disord.* 2007;32:139-162.
9. Blood GW, Boyle MP, Blood IM, Nalesnik GR. Bullying in children who stutter: Speech-language pathologists' perceptions and intervention strategies. *J Fluency Disord.* 2010;35:92-109.
10. Kikuchi Y, Umezaki T, Sawatsubashi M, et al. Experiences of teasing and bullying in children who stutter. *Int Arch Commun Disord.* 2019;2:013.
11. Blumgart E, Tran Y, Craig A. Social anxiety disorder in adults who stutter. *Depress Anxiety.* 2010;27:687-692.
12. Menzies RG, O'Brian S, Onslow M, Packman A, St Clare T, Block S. An experimental clinical trial of a cognitive-behavior therapy package for chronic stuttering. *J Speech Lang Hear Res.* 2008;51:1451-1464.
13. Iverach L, Jones M, McLellan LF, et al. Prevalence of anxiety disorders among children who stutter. *J Fluency Disord.* 2016;49:13-28.
14. Gunn A, Menzies RG, Onslow M, et al. Phase I trial of a standalone internet social anxiety treatment for adolescents who stutter: iBroadway. *Int J Lang Commun Disord.* 2019;54:927-939.
15. Kikuchi Y, Kenjo M, Yoshida E, et al. Social anxiety disorder in adolescents who stutter: A risk for school refusal. *Pediatr Int.* 2023;65:e15622.
16. Craig A, Blumgart E, Tran Y. The impact of stuttering on the quality of life in adults who stutter. *J Fluency Disord.* 2009;34:61-71.
17. Koedoot C, Bouwmans C, Franken MC, Stolk E. Quality of life in adults who stutter. *J Commun Disord.* 2011;44:429-443.
18. McAllister J, Collier J, Shepstone L. The impact of adolescent stuttering on educational and employment outcomes: Evidence from a birth cohort study. *J Fluency Disord.* 2012;37:106-121.
19. Gerlach H, Totty E, Subramanian A, Zebrowski P. Stuttering and labor market outcomes in the United States. *J Speech Lang Hear Res.* 2018; 61:1649-1663.
20. Langevin M, Packman A, Onslow M. Parent perceptions of the impact of stuttering on their preschoolers and themselves. *J Commun Disord.* 2010; 43:407-423.
21. Johnson W. The onset of stuttering. Minneapolis: University of Minnesota Press; 1959.
22. Ambrose NG, Yairi E. The Tudor Study: Data and ethics. *Am J Speech Lang Pathol.* 2002;11:190-203.
23. Frigerio-Domingues C, Drayna D. Genetic contributions to stuttering: The current evidence. *Mol Genet Genomic Med.* 2017;5:95-102.
24. Kang C, Riazuddin S, Mundorff J, et al. Mutations in the lysosomal enzyme-targeting pathway and persistent stuttering. *N Engl J Med.* 2010;362:677-685.
25. Raza MH, Mattera R, Morell R, et al. Association between rare variants in AP4E1, a component of intracellular trafficking, and persistent stuttering. *Am J Hum Genet.* 2015;97:715-725.
26. Raza MH, Domingues CEF, Webster R, et al. Mucolipidosis types II and III and non-syndromic

stuttering are associated with different variants in the same genes. *Eur J Hum Genet.* 2016;24:529-534.

27. Jones M, Onslow M, Packman A, et al. Randomised controlled trial of the Lidcombe programme of early stuttering intervention. *BMJ.* 2005;331:659.

28. Trajkovski N, O'Brian S, Onslow M, et al. A three-arm randomized controlled trial of Lidcombe Program and Westmead Program early stuttering interventions. *J Fluency Disord.* 2019;61:105708.

29. de Sonneville-Koedoot C, Stolk E, Rietveld T, Franken MC. Direct versus Indirect Treatment for Preschool Children who Stutter: The RESTART Randomized Trial. *PLOS ONE.* 2015;10:e0133758.

30. Waelkens V, Mini KIDS. Direct therapy for young children who stutter (2-6 years). Tiegem (BE) Veerle Waelkens. 2018.

31. Millard SK, Zebrowski P, Kelman E. Palin parent-child interaction therapy: The bigger picture. *Am J Speech Lang Pathol.* 2018;27:1211-1223.

32. Woods S, Shearsby J, Onslow M, Burnham D. Psychological impact of the Lidcombe Program of early stuttering intervention. *Int J Lang Commun Disord.* 2002;37:31-40.

33. Yaruss JS, Reeves N, Herring C. How speech-language pathologists can minimize bullying of children who stutter. *Semin Speech Lang.* 2018;39:342-355.

34. Johnson G, Onslow M, Horton S, Kefalianos E. Reduced stuttering for school-age children: A systematic review. *J Fluency Disord.* 2023;78:106015.

35. Johnson G, Onslow M, Horton S, Kefalianos E. Psychosocial features of stuttering for school-age children: A systematic review. *Int J Lang Commun Disord.* 2023;58:1829-1845.

36. Ezrati-Vinacour R, Platzky R, Yairi E. The young child's awareness of stuttering-like disfluency. *J Speech Lang Hear Res.* 2001;44:368-380.

37. Ambrose NG, Yairi E. The development of awareness of stuttering in preschool children. *J Fluency Disord.* 1994;19:229-245.

38. Boey RA, Van de Heyning PH, Wuyts FL, Heylen L, Stoop R, De Bodt MS. Awareness and reactions of young stuttering children aged 2-7 years old towards their speech disfluency. *J Commun Disord.* 2009;42:334-346.

39. Kikuchi Y, Umezaki T, Adachi K, et al. Awareness of stuttering in Japanese children aged 3-7 years. *Pediatr Int.* 2021;63:150-153.

40. Vanryckeghem M, Brutten GJ, Hernandez LM. A comparative investigation of the speech-associated attitude of preschool and kindergarten children who do and do not stutter. *J Fluency Disord.* 2005;30:307-318.

41. Winters KL, Byrd CT. Pediatrician referral practices for children who stutter. *Am J Speech Lang Pathol.* 2020;29:1404-1422.

42. Riley GD, Riley J. Physician's screening procedure for children who may stutter. *J Fluency Disord.* 1989;14:57-66.

43. Yairi E, Carrico DM. Early childhood stuttering: Pediatricians' attitudes and practices. *Am J Speech Lang Pathol.* 1992;1:54-62.

44. LaSalle LR, Huffman GD. Speech sample measures in Japanese children and adults who stutter. Speech, Language and Hearing/ 2014;18:64-73.

45. Coloroso B, The bully, the bullied, and the bystander. New York, NY: HarperCollins Publisher, Inc, 2003.

46. Langevin M, Bortnick K, Hammer T, Wiebe E. Teasing/bullying experienced by children who stutter: Toward development of a questionnaire. *Contemp Issues Commun Sci Disord.* 1998;25:8-20.

47. Bloodstein O. The Development of Stuttering Ⅱ. Developmental Phases. *J speech hear disord.* 1960;25:366-376.

48. Constantino CD, Leslie P, Quesal RW, Yaruss JS. A preliminary investigation of daily variability of stuttering in adults. *J Commun Disord.* 2016;60:39-50.

49. Davidow JH, Ye J, Edge RL. The reliability of simultaneous versus individual data collection during stuttering assessment. *Int J Lang Commun Disord.* 2023;58:1251-1267.

© 2025 European Society of Medicine

50. Sønsterud H, Howells K, Ward D. Covert and overt stuttering: Concepts and comparative findings. *J Commun Disord.* 2022;99:106246.

51. Brutten GJ, Dunham SL. The Communication Attitude Test. *J Fluency Disord.* 1989;14:371-377.

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