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ORIGINAL RESEARCH

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Questionnaire survey on the conceptual framework, optimal evaluation, and support measures for children's language disorders in Japan using the Delphi method

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Abstract

Objectives: To compile the opinions of native Japanese speakers on the conceptual framework, optimal evaluation, and support measures for children with language disorders to devise materials on which a consensus can be formed.

Design: A quantitative descriptive study using the Delphi method.

Setting: Using the Delphi method, 43 clinicians with at least 15 years of experience working professionally with children's language disorders in Japan were surveyed three times via a web-based questionnaire. Thirty-nine items that were carefully selected by the working group were surveyed, and the agreement level was set to ≥80%.

Main Outcome Measures: We investigated the following aspects related to developmental language disorder (DLD) among Japanese children: definition, core symptoms, evaluation of core symptoms, relationship with a second language, relationship with other related disorders, support systems, and information availability.

Results: Overall, 43 qualified panel members were included in this study. Among the 39 items in the questionnaire, a high level of consensus (≥80%) from the responses of the participants was achieved for five items in Round 1, whereas no consensus (<50%) was achieved for seven items. After revising and integrating the questionnaires into 22 items, we conducted Rounds 2 and 3 and obtained high and medium levels of agreement in 20 items on disease concept, core symptoms, coexisting disorders, and manner of support of DLD in children.

Conclusion: Our results clarify the previously ambiguous image of DLD in Japan. Information-sharing strategies that connect professionals, patients, their families, and community members are required in the future.

Level of Evidence: 5

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KEYWORDS
conceptual framework, Delphi method, developmental language disorder, native Japanese speakers, questionnaire survey

1 | INTRODUCTION

Children's language disorders are a notable developmental issue, with a great deal of effort being made to address them and provide support in various specialized fields, including education, medicine, and psychology. However, there is currently little agreement regarding the definitions of terms and standards for identifying children's language disorders, and this lack of consensus may impede appropriate intervention and research activities.[1] Recent studies regarding this problem have collected the opinions of specialists (researchers and clinicians with sufficient experience in working with children with language disorders) from Europe and the USA to form a consensus regarding the concepts and terms involved.[2,3]

In Japan, there is much debate regarding the classification of children's language disorders, which has affected Japanese research, surveys, and support for such disorders. The Japanese Association of Speech-Language-Hearing Therapists conducted a nationwide survey on developmental language delay/disorder in 2006–2007 and stated that different standards and names for the disorder used by different facilities made it difficult to conduct a detailed study of the exact number of patients.[4] Concepts regarding children's language disorders have recently attracted attention in Japan. However, these language symptoms and characteristics have not been determined and are usually judged based on a rough clinical picture.[5]

Japanese is a unique language spoken only in Japan and is distinct from the languages spoken in other countries. Hence, European and American studies cannot be generalized to the Japanese population. Therefore, this study was performed to define children's language disorders in Japan by summarizing the opinions of specialists who have been supporting and working with language disorders in children whose native language is Japanese.

2 | METHODS

2.1 | Study design

By summarizing the opinions of specialists regarding children's language disorders and considering the conceptual framework, optimal evaluation, and support measures, this study was performed to derive fundamental data on which a consensus could be formed. It minimized the influence of authorities/specific individuals on discussions to create a consensus.

The Delphi method, which is a recommended formal means of creating consensus in the Medical Information Distribution Service, was used to obtain a quantitative description of the results.

2.2 | Selection of panel members

This study included specialists with ≥15 years of experience in children's language disorders, including providers of clinical services, academic researchers, special needs education teachers, and combinations of any of the above. These criteria were established with the consideration that several panel members involved in the Delphi-based research had 5–15 years of experience in various fields. In the Delphi method, there is no established method for calculating the number of samples, and it is acceptable to include 10–100 experts, depending on the survey content. In this study, as the survey was conducted in the restricted field of children's language disorders and that previous studies were performed in populations of approximately 50 participants,[6–9] we set a target sample size of 40–50 participants.

We established the following criteria for study participants:

1. Native Japanese speaker qualified as a specialist under the Japanese law or an official certification system, including medical doctors, nurses, speech therapists, special needs education teachers, and certified psychological counselors.
2. Over 15 years of involvement as a specialist in activities related to children with language disorders.
3. The principal investigator and co-investigators of this study were excluded from participating in the panels.

2.3 | Recruitment of panel members

Participants were recruited from specialists' networks in Japan. We also recruited participants by disclosing the outline of the research at academic meetings and research groups to which the principal investigator and co-investigators belonged. A web-based preliminary questionnaire with an explanation of the study and consent form was sent to applicants who contacted us.

2.4 | Study flow (outline)

The flow of this study using the Delphi method was shown in Figure 1. In this study, the Delphi method consisted of three rounds of questionnaires that allowed experts to give their opinions anonymously. After the experts answer each round of questionnaires, the summary of the answers were feedbacked to each expert. Then, the experts filled out next questionnaire that gave them the opportunity to provide updated opinions based on what they understood from the summary report.

The Delphi method is a systematic and qualitative method to obtain the most reliable consensus by collecting opinions from a

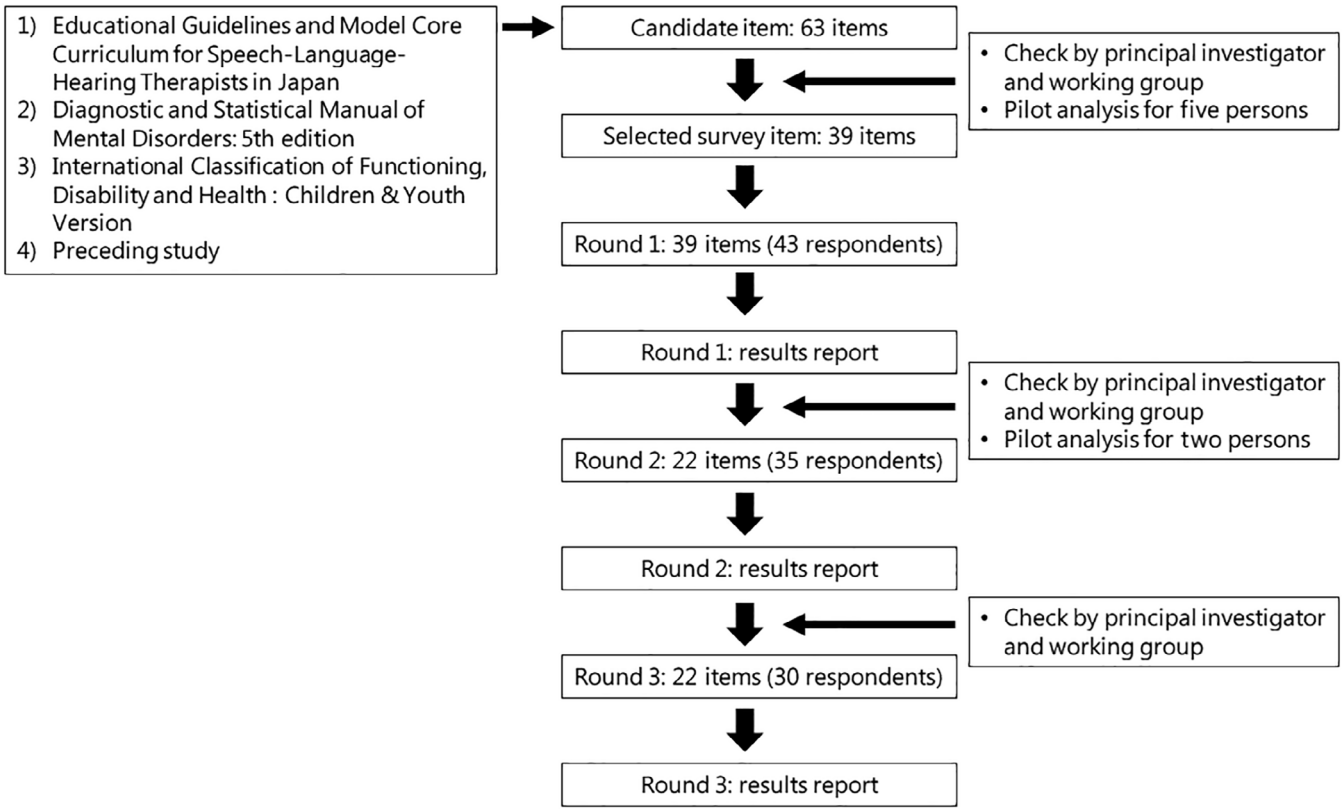

FIGURE 1 Outline of the survey using the Delphi method. In the first round, 39 questionnaires were selected from 63 candidates. Forty-three participants answered to them. After feedbacking the summary of the answers to each participant and revising the questionnaires, the survey proceeded to the second round. A similar process was conducted once more, and the survey was completed after the third round.

group of experts through several rounds of questions. It relies on experts who are knowledgeable about a certain topic so they can increase accuracy of forecasts and reach consensus. Rather than a simple survey, it could be seen as a virtual meeting, and the consensuses obtained from a group decision-making process by the Delphi method are superior to those obtained from individuals.

2.5 | Preparation of the questionnaire

The sources used to create the questionnaire in this study are listed below. We used a broad definition of developmental disorders in this study, such as mental retardation, cerebral palsy, autism spectrum disorder (ASD), learning disorders, and attention deficit hyperactivity disorder (ADHD), and assessed the relations between these disorders and developmental language disorder (DLD). We used guidelines and diagnostic criteria commonly used in Europe, the USA, and Japan.[3,10–14]

We organized a working group composed of otolaryngologists, pediatricians, speech-language-hearing therapists (STs), physiotherapists, and statisticians to collaborate in this study. Based on the above reference materials, the working group initially prepared 63 items related to the conceptual framework and support for DLD through repeated extraction. Then, a pilot analysis was conducted by five specialists (four STs and one pediatric nurse) without any connection to the working group or the panel. Based on the results of this analysis, the working group refined the clarity of items and expressions involved, and subsequently prepared the 39-item questionnaire for Round 1. The questionnaire included a free comment section for each item, allowing the participants to describe opinions and requests about each item.

The working group compiled the consensus rates obtained in Round 1 and the comments from panel members, and the questionnaire was revised for the next round to facilitate a consensus. Subsequently, a second pilot analysis was conducted with two unrelated specialists (one ST and one pediatric nurse) in the same manner as Round 1, after which the items were modified and a questionnaire consisting of 22 items was prepared. This questionnaire was also used in Round 3.

2.6 | Explanation to panel members

The questionnaire used in each round included an explanation of the Delphi method and the estimated number of rounds (maximum of 5). Detailed settings of the level of agreement would be shown in the report summarizing the results after Round 2.

The questions were answered on a 7-point Likert scale: 1, strongly disagree; 2, disagree; 3, somewhat disagree; 4, neither; 5, somewhat agree; 6, agree; and 7, strongly agree. After each question, columns were provided for free comments, and if the response was 1, 4, or 7, the participant was required to explain the reason for selecting the option, as Japanese people tend to select a medium level (4 in this study) when answering questions.[15] Furthermore, the participants could provide reasons even if they selected responses other than 1, 4, or 7.

For the survey period, 2–5 weeks between December 2020 and January 2021 were allocated for Round 1, 2–5 weeks between May and June 2021 for Round 2, and 3 weeks in June 2021 for Round 3, including a reminder period to provide sufficient time for the participants to respond.

2.7 | Definition of consensus by panel members

The Delphi method has no clear standards for defining consensus, with the accepted consensus range being wide (51%–80%) depending on the nature of the study. In this study, 1–3 points on the Likert scale were assigned to "disagree" and 5–7 points to "agree." An agreement rate of 51%–69% of panelists was considered low, 70%–79% medium, and ≥80% high agreement, and the items were further modified according to these levels of consensus.

2.8 | Ethics statement

This study was conducted in accordance with the principles of the Declaration of Helsinki and the Ethical Guidelines for Medical and Health Research Involving Human Subjects in Japan. The study protocol was approved by the Life Science Committee, Kumamoto Health Science University (ID: 20020).

3 | RESULTS

3.1 | Panel members

In response to the call for study participants for this study, 53 candidates responded. Among these, four did not complete the preliminary questionnaire and six were excluded for one of the following reasons: self-declaration of qualification error after reading the preliminary questionnaire, inability to participate in the study, and failure to meet the panel selection criteria.

Overall, 43 qualified panel members were included; their attributes are shown in Table 1. All participants were specialists working with children with language disorders, and the average number of years of experience was 24.8 ± 6.8 (15–37) years. Overall, 13 participants had an accepted journal publication, 17 had written books; 16 had lectured in training sessions or seminars, 16 had served as a chairperson, council member, or committee member in academic societies, and 14 had worked as a practical session supervisor in a training course.

TABLE 1 Panel member attributes.

Profession	*n* (%) *n* = 43
Speech-language-hearing therapist	31 (72.0)
Doctor	2 (4.7)
Teacher	8 (18.6)
Psychological specialist[a]	2 (4.7)

[a]Includes school counselors, clinical psychologists, clinical developmental psychologists, and special educational needs specialists.

3.2 | Survey results

In the responses from the 43 participants in Round 1, a high level of consensus (≥80%) was obtained for 5 of the 39 items in the questionnaire (Q8, 9, 25, 26, 27), a medium level (70.0%–79.9%) for 7, and a low level (51%–69.9%) for 20 (Table 2). No consensus (<50%) was reached for seven items. A slight imbalance was observed among the opinions of panel members with different professions, as evidenced by a review of responses and comments. Following Round 1, we revised the contents of the questionnaire items based on participant feedback to achieve better consensus and integrated them into 22 items for the next round.

We received responses from 35 of the 43 participants in Round 2 (response rate 81%, valid response rate 100%). Consensus was achieved for all 22 items; a high level for 18 items, medium level for 1 item, and low level for 3 items (Table 3). There were no items in which consensus was not obtained. Therefore, we proceeded to the next round using the same questionnaire as in Round 2 with disclosure of the results of Round 2. We received responses from 30 of the 35 participants in Round 3 (response rate 86%, valid response rate 100%). High-level consensus was obtained for 17 items, and medium- and low-level agreements were obtained for 3 and 2 items, respectively. The results were similar to those of Round 2. We declared Round 3 to be the final round and completed the survey.

A summary of agreed consensus was as follows:

1. DLD should be defined as an independent disorder.
2. A comprehensive picture of DLD should be assessed by observation findings and standardized tests.
3. The core characteristics of DLD are presented in phoneme, morphology, meaning, vocabulary, syntax, and pragmatics.
4. The state of daily communication varies depending on the surrounding situation.
5. Intellectual disability, ASD, ADHD, and reading and writing problems can coexist with DLD, and their evaluation is necessary.
6. In multilingual children living in Japan, their native and second languages should be evaluated separately.

TABLE 2 Result of Round 1.

Item	Question	Consensus rate (%), $n = 43$	Median rating/IQR per item	Level
Q1	DLD is more appropriate or seems more appropriate as a diagnostic name than developmental language delay. For the sake of simplicity, we will use DLD in this questionnaire. Please keep this in mind when responding to the following questions.	60.4	5/2	Low
Q2	We should recognize the diagnostic name DLD as a distinct disorder.	60.4	5/2	Low
Q3	Cases of DLD in which there is a difference between language ability and non-language ability should be treated differently from those in which both language ability and non-language ability have equally low levels.	76.7	6/1	Medium
Q4	DLD is diagnosed when the results of one or two standardized tests (language test, intelligence test, etc.) deviate by ≥1.5 standard deviations from the average.	46.5	4/1	Disagreed
Q5	The core characteristics (symptoms) of DLD are problems that occur in each of the following aspects: phoneme, morphology, meaning vocabulary, syntax, and pragmatics.	62.7	5/2	Low
Q6	Language disorders that affect both spoken and written language in school-age children should be considered DLD and evaluated and diagnosed accordingly.	53.4	5/2.5	Low
Q7	It is preferable to establish a severity scale (mild to most severe, etc.) for DLD before evaluating and diagnosing the disorder (e.g., evaluate how disability can be perceived across a multifactor severity spectrum).	69.7	5/2	Low
Q8	It is preferable to evaluate and diagnose DLD based on the number of symptoms (core characteristics) that apply to the child concerned (e.g., observe the problems multilaterally and evaluate as follows: the patient has ### symptoms, but no %%% symptoms, so this is the &&& type).	81.4	5/1	High
Q9	Deafness can cause problems associated with DLD.	81.4	6/1	High
Q10	A voice disorder (e.g., vocal cord nodules, vocal cord polyps, or voice quality disorders) can cause problems associated with DLD.	67.4	2/2	Low
Q11	An acquired language disorder (traumatic brain injury, etc.) can cause problems associated with DLD.	65.1	6/3	Low
Q12	Intellectual disability can cause problems associated with DLD.	76.7	6/1	Medium
Q13	ASD can cause problems associated with DLD.	79.0	6/1	Medium
Q14	ADHD can cause problems associated with DLD.	53.4	5/3	Low
Q15	LD can cause problems associated with DLD.	53.4	5/2.5	Low
Q16	A hereditary disease or congenital anomaly (Down syndrome or Klinefelter syndrome, etc.) can cause problems associated with DLD.	76.7	6/1	Medium
Q17	A morphological abnormality around the mouth (cleft palate, cleft lip, etc.) can cause problems associated with DLD.	51.1	5/2	Low
Q18	Stuttering or fluency disorders can cause problems associated with DLD.	48.8	4/3	Disagreed
Q19	Dysarthria can cause problems associated with DLD without causing organic or functional problems.	46.5	4/2.5	Disagreed
Q20	Disorders related to an inappropriate child-rearing environment (reactive attachment disorder, etc.) can cause problems associated with DLD.	65.1	5/2	Low
Q21	When multilingual children learning Japanese actively as a second language (e.g., native language is English and Chinese) to live in Japan have difficulty learning, we should consider them as having DLD.	41.8	4/2.5	Disagreed

(Continues)

TABLE 2 (Continued)

Item	Question	Consensus rate (%), $n = 43$	Median rating/IQR per item	Level
Q22	In Japan, when evaluating or diagnosing multilingual children (e.g., native language is English and Chinese), the native language and the second language (in this case, Japanese) should be distinguished.	76.7	5/1	Medium
Q23	In Japan, there is a standardized test for patients with DLD that enables a thorough evaluation (i.e., the findings of one test can be used to evaluate and diagnose DLD unless it is necessary to use multiple tests).	65.1	3/2	Low
Q24	The distinction between developmental age and chronological age should be clarified in each of the following fields when evaluating DLD: phoneme, morphology, meaning, vocabulary, syntax, and pragmatics (e.g., the developmental age for vocabulary is 2 years behind the chronological age).	72.0	5/2	Medium
Q25	Elements that impede development in each field (phoneme, morphology, meaning, vocabulary, syntax, and pragmatics) should be clarified in the evaluation of DLD (e.g., deafness interferes with the development of phonemes due to the restricted auditory input).	88.3	5/1	High
Q26	When treating children with developmental problems as a team, it is necessary to have specialist staff that are familiar with DLD.	100.0	6/0	High
Q27	As DLD can change between childhood and adolescence, an approach that takes these changes into account is necessary.	95.3	6/0	High
Q28	When the child has other problems (e.g., strong obsessive–compulsive disorder, out-of-seat behavior, impulsive/hyperactive behavior, and inattentiveness) in addition to DLD, a different approach should be taken on a case-by-case basis.	69.7	6/2	Low
Q29	Using the current evaluation method and examination, it is possible to determine the state of daily communication of a child with DLD.	44.1	4/2	Disagreed
Q30	There is a formulated (standardized) format (a place for discussion, a form, or tool, etc.) for describing and sharing the characteristics of DLD to connect the child concerned and their family with staff at the kindergarten or school (mainly teachers) that they attend.	51.1	3/3	Low
Q31	There is a formulated (standardized) format (a place for discussion, a form, or tool, etc.) for describing and sharing the characteristics of DLD to connect the child concerned and their family with close people in the community (friends and caregivers, children's association administrators, private tutors, such as music teachers).	65.1	3/2	Low
Q32	There is a formulated (standardized) format (a place for discussion, a form, or tool, etc.) for describing and sharing the characteristics of DLD to connect the child concerned and their family with people they meet when they go out for recreational activities (staff at convenience stores or leisure facilities, such as movie theaters).	60.4	3/2	Low
Q33	A section about specific problems that occur in each area of language (phoneme, morphology, meaning, vocabulary, syntax, and pragmatics) is required in the format used to describe the characteristics of DLD of the child concerned to close people in the community (friends and caregivers, children's association administrators, private tutors, such as music teachers).	41.8	4/2	Disagreed
Q34	A section about the problems that occur that are unrelated to language (emotional control, attention, impulsiveness,	74.1	5/1.5	Medium

TABLE 2 (Continued)

Item	Question	Consensus rate (%), $n = 43$	Median rating/IQR per item	Level
	hyperactivity, motivation, memory, and sociability) is required in the format used to describe the characteristics of DLD of the child concerned to close people in the community (friends and caregivers, children's association administrators, private tutors, such as music teachers).			
Q35	A section about the number of people that the child can talk with at a time (conversation with three people, etc.) is required in the format used to describe the characteristics of DLD of the child concerned to close people in the community (friends and caregivers, children's association administrators, private tutors, such as music teachers).	53.4	5/1	Low
Q36	A section about the ability to grasp, assemble, and make sense of the content of intermittent conversations is required in the format used to describe the characteristics of DLD of the child concerned to close people in the community (friends and caregivers, children's association administrators, private tutors, such as music teachers).	44.1	4/2	Disagreed
Q37	A section about the ability to flexibly change the content of the conversation to suit the other person (flexible conversation) is required in the format used to describe the characteristics of DLD of the child concerned to close people in the community (friends and caregivers, children's association administrators, private tutors, such as music teachers).	62.7	5/1	Low
Q38	A section about the length of utterance (e.g., ability to speak using about three words) is required in the format used to describe the characteristics of DLD of the child concerned to close people in the community (friends and caregivers, children's association administrators, private tutors, such as music teachers).	69.7	5/2	Low
Q39	A section about the fluency of speech (ability to speak smoothly without becoming stuck for words) is required in the format used to describe the characteristics of DLD of the child concerned to close people in the community (friends and caregivers, children's association administrators, private tutors, such as music teachers).	53.5	5/2	Low

Abbreviation: ADHD: Attention deficit hyperactivity disorder; ASD: Autism spectrum disorder; DLD: developmental language disorder; IQR: interquartile range; LD: learning disorder.

7. The establishment of a format to support children with DLD and their family is required.

4 | DISCUSSION

4.1 | Conceptual framework

We presented the findings of a survey of Japanese specialists regarding language disorders in children whose native language is Japanese. A previous study that can be best compared to our analysis is the CATALISE project reported by Bishop et al.,[16] who discussed the need for diagnostic terminology and language impairment criteria specializing in speech disorders in children. They further stated that although diagnostic terminology can help people to understand the disability and aid in research and investigation, it is critical for definitions and concepts to be organized and presented in a concrete way.

According to the specialists' opinions in this study, an expression containing "disorder" is more appropriate for describing children's language disorders, such as DLD. Only cases presenting with conditions for which symptoms persist without natural improvement should be diagnosed with a language disorder in Japan. Hence, the same results were obtained in Japan, a Japanese-speaking country, as in English-speaking countries. It is hypothesized that despite the differences in language systems, there are many similarities in how the disorder is perceived.

4.2 | Evaluation of core symptoms

The core symptoms included problems in the language domains of phoneme, morphology, meaning, vocabulary, syntax, and pragmatics. Reading and writing difficulties were identified as issues that could occur concurrently with DLD.

TABLE 3 Results of Rounds 2 and 3.

		Round 2			Round 3		
Item	Question	Consensus rate (%), $n = 35$	Median rating/ IQR per item	Level	Consensus rate (%), $n = 30$	Median rating/ IQR per item	Level
Q1	Language development problems can sometimes improve or disappear around the time when children enter school (4–6 years).	62.8	5/3	Low	70.0	5/2.75	Medium
Q2	When children's language problems persist even after they grow up and show no signs of improvement, they should be treated as DLD.	82.8	6/1	High	80.0	6/1	High
Q3	DLD should be defined by clarifying the disease concept and classifying it as an independent disorder in the same way as ASD, ADHD, and LD.	80.0	5/1	High	76.7	6/1	Medium
Q4	A comprehensive picture of DLD should be obtained by combining daily observational findings with quantified standardized test results.	100.0	6/0	High	99.9	6/0	High
Q5	The problems that occur in one or more of the following fields are the core characteristics (symptoms) of DLD: phoneme, morphology, meaning, vocabulary, syntax, and pragmatics.	82.8	5/1	High	86.6	5/1	High
Q6	As DLD and speech disorders (voice disorder, dysarthria, etc.) are frequently observed together, speech should be evaluated when evaluating DLD.	82.8	6/1	High	83.3	6/1	High
Q7	Children with acquired brain damage (traumatic brain injury, etc.) may have language problems, although it depends on the time of injury or onset of the condition. When evaluating such children for DLD, in addition to checking the injury site, it is necessary to confirm whether once-acquired language ability has declined or disappeared (including interviews to collect information).	100.0	6/0	High	100.0	6/0	High
Q8	As intellectual disability and DLD can coexist, intellectual function should be evaluated when evaluating DLD.	97.1	6/0	High	96.6	6/0	High
Q9	As ASD and DLD can coexist, the characteristics of ASD should be evaluated when evaluating DLD.	94.2	6/0	High	96.6	6/0	High
Q10	As ADHD and DLD can coexist, ADHD should be evaluated when evaluating DLD.	88.5	6/1	High	93.3	6/1	High
Q11	As reading and writing problems among school-age children can coexist with DLD, they should be evaluated when evaluating DLD.	97.1	6/1	High	96.6	6/0.75	High

TABLE 3 (Continued)

Item	Question	Round 2			Round 3		
		Consensus rate (%), $n = 35$	Median rating/ IQR per item	Level	Consensus rate (%), $n = 30$	Median rating/ IQR per item	Level
Q12	As children with a hereditary disease or congenital anomaly (Down syndrome, Klinefelter syndrome, etc.) frequently have problems with language development, it is necessary to check for their presence when evaluating DLD (including interviews to collect information).	94.2	6/0	High	93.3	6/0	High
Q13	As DLD is frequently observed in conjunction with stuttering or fluency disorder, they should be evaluated concurrently when evaluating DLD.	65.7	5/2	Low	66.6	5/2	Low
Q14	As disorders related to inappropriate child-rearing environments (reactive affection disorder, etc.) frequently affect language development due to the lack of opportunities to form affections with people through interactions and experiences, it is necessary to evaluate problems regarding disorders related to inappropriate child-rearing environments (reactive affection disorder, etc.) when evaluating DLD.	74.2	6/1.5	Medium	73.3	6/1.75	Medium
Q15	Children whose native language is not Japanese (English, Chinese, etc.) and who have difficulty learning Japanese should not be considered to have DLD if they have no difficulty with their native language.	85.7	6/1	High	83.3	6/1	High
Q16	When multilingual children living in Japan whose native language is not Japanese (English, Chinese, etc., with Japanese as their second language) have language problems, their native language and second language (in this case, Japanese) should be evaluated separately to comprehensively assess the situation.	85.7	6/1	High	83.3	6/1	High
Q17	When evaluating DLD, dynamic assessment is a useful method for determining how children are learning (and if they are using a learning method). (Dynamic assessment: during an interview with a child, changes in the behavior of the child are observed to determine whether the child can respond correctly when an example is shown or a hint is given.)	94.2	6/0	High	93.3	6/0	High

(Continues)

TABLE 3 (Continued)

Item	Question	Round 2			Round 3		
		Consensus rate (%), $n = 35$	Median rating/ IQR per item	Level	Consensus rate (%), $n = 30$	Median rating/ IQR per item	Level
Q18	When evaluating DLD, developmental age in each of the following fields should be clarified: phoneme, morphology, meaning, vocabulary, syntax, and pragmatics.	85.7	5/1	High	83.3	5/1	High
Q19	As the state of daily communication varies depending on the situation (people, location, etc.), it is preferable to gain an overall picture of DLD by observing multiple situations.	91.4	6/0	High	90.0	6/0	High
Q20	The use of Transition Support Sheets/School Attendance Support Sheets being promoted to facilitate communication between the child concerned and their family with staff of kindergarten or school (mainly teachers) may not adequately describe information about DLD. Therefore, a format for describing the disorder is preferable.	80.0	5/1	High	83.3	5/1	High
Q21	To connect children with DLD and their families to the people in the local community (friends and caregivers, children's association administrators, private tutors such as piano teachers, etc.), it is preferable to have a format to explain how to support them.	82.8	5/1	High	80.0	5/1	High
Q22	To connect children with DLD and their families to the people they meet in recreational activities (staff of convenience stores or leisure facilities, such as movie theaters), it is preferable to have a symbol (such as the international symbol for people with disabilities) indicating that they require assistance.	65.7	5/1.5	Low	66.6	5/2	Low

Abbreviation: ADHD: attention deficit hyperactivity disorder; ASD: autism spectrum disorder; DLD: developmental language disorder; IQR: Interquartile range; LD: learning disorder.

In relation to other associated disorders, it is clear that although there was agreement that various other related disorders are not necessarily causes of DLD, they are considered distinct disorders that may occur concurrently. Therefore, it was broadly agreed that hearing loss, dysarthria, speech disorders, acquired brain injury, intellectual disability, ASD, ADHD, reading and writing problems, and known congenital anomalies should be evaluated simultaneously with DLD. In addition, stuttering/fluency disorder and inappropriate nurturing environment should be evaluated as needed.

However, this study further revealed that no testing tool in Japan can comprehensively assess the core symptoms of DLD and that multiple tests must be combined for this purpose. Hence, a tool that can comprehensively assess these aspects must be developed in the future.

4.3 | Support systems

In Round 1, a high level of agreement among the specialists was obtained in Q26 "When treating children with developmental

problems as a team, it is necessary to have specialist who are familiar with DLD" and Q27 "As DLD can change between childhood and adolescence, an approach that takes these changes into account is necessary." This indicates that it is necessary to allocate expert staff for support and to prepare a system that can be approached over the long term. However, some panelists commented that they did not believe it necessary to provide specific and specialized information when considering social participation. Therefore, in Round 2, many questions were integrated, and questions were asked about how information should be provided in three areas: professionals, people close to the community, and people encountered in daily living. The results showed that it is necessary to improve information provision, people close to the community should provide information on how to communicate with the target person, and the use of a symbol (such as the international symbol for people with disabilities) is difficult because of the complexity of the disability.

There is a need to develop a new format for sharing information among professionals in Japan and devise tools to enable the provision of information on communication methods to connect the community with the children and their families.

4.4 | Study limitations

Few studies have applied the Delphi method to language disorders in Japanese-speaking children. As we referred to previous studies in Western languages, which differ from Japanese, the validation and revision of the questionnaire items for each round required many processes. This may have been complicated for panel members and thereby could have potentially influenced some of their responses. Another limitation was that although the principal investigator and working group members are highly experienced as relevant specialists, they were excluded from participating in the panel and were unable to express their opinions. Therefore, additional research is needed based on the findings of this study.

5 | CONCLUSION

A questionnaire survey was conducted to compile the opinions of conceptual framework, optimal evaluation, and support measures for native Japanese children with DLDs using the Delphi method. The results made the previously ambiguous image of DLD clear in Japan. In the future, information-sharing strategies that connect professionals, patients, their families, and members of the community will be required. We hope that this study leads to more understanding among specialists to treat children with language disorder. In addition, collaborative research with more specialists and relevant organizations is anticipated.

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CONFLICT OF INTEREST STATEMENT

No author has any competing interest.

DATA AVAILABILITY STATEMENT

Authors are not permitted to share the data due to ethical approval constraints. However, the datasets generated and/or analyzed during the current study are available from the corresponding author on reasonable request.

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