JÖNKÖPING UNIVERSITY
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# Title: Understanding the emotional rollercoaster in children with Developmental Language Disorder (DLD)

**Research area:** Interventions in Childhood

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## Abstract

### Background

Developmental Language Disorder (DLD) is a neurodevelopmental condition with difficulties in understanding and producing language. These language difficulties make it difficult for them to understand and express the various emotions, leading to emotional challenges as they grow. Research on studying the emotional challenges is limited and growing, but still, there is a lack of evidence that mentions how these challenges evolve from childhood to adolescence.

### Aim

To identify and understand emotional challenges in school-going children aged 6 to 17 years with DLD and to see how these evolve from childhood to adolescence.

### Method

The current scoping review included five databases, and the search process was carried out systematically, resulting in 12 articles. These articles were selected based on the inclusion and exclusion criteria and the PCC framework. All the articles reported on the emotional challenges experienced by children and adolescents.

### Results

The results reveal that the children with DLD have problems with emotional competence, which includes awareness, regulation, and categorization. When these challenges were seen from childhood to adolescence, it was observed that the challenges were more with understanding and exhibited behaviourally during childhood, and gradually start to become multifaceted by affecting the social life, and during adolescence, it becomes more internalizing, impacting their social skills and mental health. The primary cause is the language deficits, which continue from childhood to adolescence and sometimes till adulthood. The secondary issues encountered are the problems faced at the level of social and behavioural domains, which in turn increase the risk of mental health problems.

### Conclusions

It can be concluded that early emotional screening and implementation of tailor-made intervention strategies targeting not just the language deficits but also the other domains (e.g., emotional or social), which are difficult for the children, will positively impact their everyday life and help them in managing their emotional challenges.



**Keywords:** Emotional Challenges, Developmental Language Disorder (DLD), School-going children, Childhood to adolescence, and language deficits.

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# 1. Introduction

## 1.1. Understanding Developmental Language Disorder (DLD)

The most common problems encountered in children recently are language problems, which are estimated to affect about 7% of children, depending on their age (Norbury et al., 2016). There are many neurodevelopmental disorders in which language delays or disorders co-occur with the condition, or language delays occur as a stand-alone condition. Among the many, the prevalence of developmental language disorder is increasing, and it has been found from an Australian study that 6.4% of the children are diagnosed with this disorder by 10 years of age (Calder et al., 2022). It is reported to affect one in 14 children, which is two children in a class of 30 children (Norbury et al., 2016). With such a prevalence rate, many people still lack awareness of the symptoms and also the terminology. Developmental language disorder (DLD) is defined as enduring substantially low language abilities that significantly affect daily functioning, in the absence of biomedical conditions (sensory neural hearing loss, intellectual impairment, or autism spectrum disorder) where language impairment is a part of a complex of impairments (Bishop et al., 2017).

## 1.2. Implementation of the terminology

Specific Language Impairment (SLI) was the term used initially to describe language delays. This term had many confusions and was misleading; therefore, many authors decided on the need for a change to a definite and concrete term that can be used to define the disorder. To decide on the concept and frame the terminology, two Delphi studies were conducted by the DLD consortium (Bishop 2016,2017) which resulted in, “Language Disorder” used to refer to difficulties that cause functional impairment in everyday life and are associated with poor prognosis, and the term “Developmental Language Disorder” was endorsed for language disorders that are not associated with any biomedical cause. They also specified in their statements that DLD can co-occur with other neurodevelopmental disorders, but the presence/ risk of a social or environmental factor does not preclude the diagnosis of DLD. And 78% agreement was obtained, and the final 12 consensus statements were reported.

## 1.3. Symptomatology of DLD

Developmental language disorder (DLD) is a neurodevelopmental condition characterized by a complex interplay between genetics and environmental factors that affects brain development (Plug et al., 2021). Commonly, 50 to 70% of these children have family

members who have experienced language problems or delays, which leads to a hereditary cause (Nudel et al., 2024). Children with DLD experience difficulties in understanding and producing language, impacting their daily lives and their social interactions (Bishop et al., 2017). The primary challenges these children face lie in the language, social, emotional, and behavioral domains. These issues stem from significant impairments in language comprehension and expression. Although DLD is an independent disorder, it can often be associated with hearing loss, autism spectrum disorder (ASD), Attention Deficit Hyperactive Disorder (ADHD), dyslexia, and other known neurodevelopmental disorders (Bishop, 2017).

Affected children struggle with various aspects of language, such as phonology, morphology, semantics, syntax, and pragmatics. They are also at an elevated risk of developing reading difficulties, including poor reading comprehension and understanding skills, which negatively affect their educational performance (Bishop et al., 2016). Symptoms often begin with the child being a late talker, exhibiting delayed language milestones during early childhood. However, in children with this disorder, symptoms frequently persist into adolescence and adulthood (Feeney et al., 2012). Specific difficulties include trouble constructing sentences, learning new vocabulary, maintaining conversations, understanding grammar, following directions, interpreting figurative language, and organizing or narrating a story (Durkin & Conti Ramsden, 2012). Vygotsky proposed that the key tool in the development of self-regulatory skills is language because this helps them in learning the use of inner speech, which helps with understanding the emotional cues. Since these children have language deficits, it can be difficult to understand these cues (Stanley, 2011).

When parents, doctors, or teachers suspect that a child may have DLD, a speech-language pathologist (SLP) evaluates to diagnose the condition. This assessment includes observation, interviews, questionnaires completed by parents or teachers, evaluation of language abilities, and the use of standardized tests to assess language performance. They also tend to face challenges at the level of social, emotional, and behavioral skills due to language problems, and it is reported to persist into adolescence and adulthood (Elbro et al., 2011). Furthermore, these children are at a higher risk of experiencing poor quality of life and mental health issues (Lyons, 2021).

Research on analysing the emotional domain of these children is growing, yet there is very limited research reporting the emotional challenges they face. However, no articles describe how these challenges evolve from childhood to adolescence, whether they change or intensify, or if there are alterations in the characteristics of the challenges that still need to be

studied. Therefore, the current scoping review aims to document the emotional challenges of school-going children aged 6 to 17 years with developmental language disorder and examine how these challenges evolve from childhood to adolescence.

### 1.4. Biopsychosocial (BPS) model by Engell (1977)

The Biopsychosocial model proposed by George L. Engell (1977) helps in the understanding of health and illness. It is a holistic framework that talks about the biological, psychological, and social dimensions. This was developed as a result of the numerous limitations of the traditional biomedical model, which solely concentrates on the biological factors (e.g., medical diagnosis). The core idea of Engell was to emphasize that health and illness are the result of a combination of factors, it is not just biological (physical symptoms), but also the psychological (mental) and social (environmental) dimensions. He describes the need and importance of treating the disease, not just from the biological aspects or just the diagnosis, but also accounting for the psychological and social aspects, which would account for a more holistic treatment that would directly help in improving the quality of life of the patient.

He explains his views through examples like, the diagnosis made through clinical investigations is not just enough, but understanding the psychological factors, like patients' reactions, thoughts, and feelings, and the social factors, like lifestyle, relationships, habits and routines are to be considered for the treatment which could help with recovery, compliance and long-term health. This model has also influenced many fields of study, like psychosomatic medicine, psychiatry, family medicine, and primary care. It has also urged the importance of treating illness as more than just a malfunction of biological mechanisms and to consider the subjective opinions of the patients. The study aims to understand emotional challenges in children with DLD, and this theory was considered because it helps understand the efficacy of the inclusion of all the aspects, and not just the diagnosis.

## 2. Aim and Research questions

The present study aims to identify and understand emotional challenges in school-going children aged 6 to 17 years with Developmental Language Disorder (DLD) and to see how these evolve from childhood to adolescence.

The research questions are,

1. What are the various emotional challenges reported in school-aged children aged 6 to 17 years with developmental language disorder (DLD)?
2. How do these emotional challenges evolve from childhood to adolescence in children with DLD?
3. What are the possible causes/ factors that lead to these emotional challenges?
4. What are the secondary issues due to the emotional challenges in these children?

## 3. Method

### 3.1. Scoping Literature Review

The research questions are investigated by carrying out a scoping literature review. This type of review aims to study the main ideas and concepts within a particular field or topic, which lacks much information or research from the available literature (Arksey & O'Malley, 2005, and Mak & Thomas, 2002).

### 3.2. Search Strategy

The search process was conducted in March 2025. The databases were selected based on the description and the specialization, such as healthcare, social sciences, psychology, education, etc. For the inclusion of articles, 5 electronic bibliographic databases were chosen, which are PsycINFO, CINAHL, ERIC, ProQuest, and MEDLINE, as described in **Table 1**. These databases possess reliable, scientific, and peer-reviewed journals. The initial search process included free text, but later specific search blocks/ strings were created to make the searches valid, which were based on the aim of the study. Synonymous words were combined with the Boolean operators "AND" and "OR" to combine and complete the search string. They were then applied to each database with an active filter: peer-reviewed articles. A search protocol was utilized by using MS-Excel for documenting the process, the name of each database, the keywords, and the number of hits obtained.

**Table 1**

*Description of the databases chosen for the review*

| S. No | Database Name | Description of the Database |
|---|---|---|
| 1. | ERIC (Education Resource Information Center) | It is a comprehensive, easy-to-use, searchable, and full-text database focusing on research in education and information in various fields. |

| | | |
|---|---|---|
| 2. | CINAHL (Cumulative Index to Nursing and Allied Health Literature) | It specializes in nursing, healthcare, biomedicine, and allied health journals. It also has the highly regarded scholarly vocabularies covering all disciplines and major publishers. |
| 3. | ProQuest | It very well complements the other databases by presenting a wide access to journals, articles, pre-prints, books, conference papers, and reports. |
| 4. | MEDLINE | It is the National Library of Medicine's (NLM) leading bibliographic database, which concentrates on articles in life sciences and biomedicine. |
| 5. | PsychINFO | It specializes in behavioural and social sciences. It also covers areas in linguistics, medicine, neuroscience, and pharmacology. |

### 3.3. Criteria for selection

The inclusion and exclusion criteria lead the way in the selection of articles for the review. The criteria were based on the *PCC framework (Population, Concept, and Context)* (Richardson et el., 1995).

- Population – School-going children aged 6 to 17 years diagnosed with Developmental Language Disorder (DLD).
- Concept – Emotional challenges. In this study, *emotional challenges* refer to the difficulties in understanding their own emotions and those of others, categorizing various emotions, and regulating their emotions. These children exhibit signs of frustration, depression, anxiety, or social withdrawal, impacting their overall well-being. This review focuses on understanding and documenting how these challenges are exhibited from childhood to adolescence.
- Context – It can be home, school, or an outside setting. Not much specificity was applied to the place.

The articles that discuss the emotional challenges in school-going children were included in the study. Articles discussing interventions, therapies, or strategies were excluded from the study. The emotional challenges of the child were assessed through parent-reported

questionnaires, task performance, assessment through standardized tests, and children's reports of their own experiences. Studies with qualitative, quantitative, and mixed methods were included. The age range of the children was strictly considered from 6 to 17 years of age, and the diagnosis of developmental language disorder was also seen in each article included in the study. There were no criteria for a fixed time frame of publication, however, the articles were restricted to peer-reviewed and in the English language. Dissertations, book chapters, and grey literature were excluded from the study. The criteria are presented in **Table 2.**

**Table 2**

*Description of the inclusion and exclusion criteria*

| Inclusion Criteria | Exclusion Criteria |
|---|---|
| • School-going children in the age range of 6 to 17 years<br>• Diagnosed with Developmental Language Disorder (DLD)<br>• Peer-reviewed articles in English Language and ethically approved.<br>• Study design (Qualitative, quantitative, or mixed)<br>• Studies/ Articles mentioning emotional challenges in children.<br>• Review and empirical studies | • Children at risk of Developmental Language Disorder (r-DLD)<br>• Studies focusing on interventions, strategies, or therapies.<br>• Other languages, grey literature, book chapters, dissertations. |

### 3.4. Process of Selection

The databases were initially searched with a few free-text keywords to check for hits. This led to the formation of the search string, which can be used in all the selected databases without any bias. The search string used was "developmental language disorder" AND child* OR adolescent* OR teenager* AND emotional*. Five databases were chosen, and on applying the search string, PsycINFO resulted in 57 articles, ERIC resulted in 26 articles, ProQuest resulted in 49 articles, CINAHL resulted in 26 articles, and MEDLINE resulted in 74 articles. A total of 232 articles from five databases were obtained as the first step. These articles were loaded into Rayyan for the process of identifying duplicates and screening the

articles. Rayyan is a web app that is designed to carry out systematic reviews, however, it can also be used for other types of reviews. From the total number of articles, after identifying and deleting the duplicates, 104 articles required screening. Title-level screening was carried out first, and then abstract-level screening was carried out. A detailed flowchart diagram of the selection process is represented in **Figure 1**.

### 3.5. Title level and abstract level screening

104 articles were screened at the title level first, and the articles that were inappropriate to the current review were excluded (n = 74). The reasons for the exclusion of these articles were that they were in another language, articles about interventions/ programs/ strategies, articles about outcomes, and articles about language assessments. Abstract-level screening was carried out for the 30 articles. After this process, the articles were screened thoroughly, and only 12 articles that fit the inclusion criteria were selected. The articles were excluded at this point due to age group problems, studying children at risk of DLD, and not addressing the emotional challenges as a core concept.

### 3.6. Data Extraction

By critically analysing the aim and the research questions, a data extraction protocol was developed in MS Excel. The data extraction protocol contained all the information needed for the analysis and documentation of the results. The contents of the extraction protocol consisted of information from the articles under various headings. They were the journal name, publication date, author's name, etc, was the preliminary information. Another part consisted of the age group, the study design, methods to identify the emotional challenges, the methods used for data collection, types of emotions reported, and the number or percentage of children presenting them. Then, finally, the protocol had information about how these challenges impacted the children and the methods or strategies considered for them (see Appendix).

### 3.7. Data Analysis

The data extraction protocol helped with the grouping of all the needed information from the articles. The 12 articles were carefully screened, and the information was extracted, keeping in mind the research question and whether it answers it appropriately. The emotional challenges reported in each study, along with the age group studied, are taken from the study. By documenting these, we can clearly understand the various challenges exhibited by

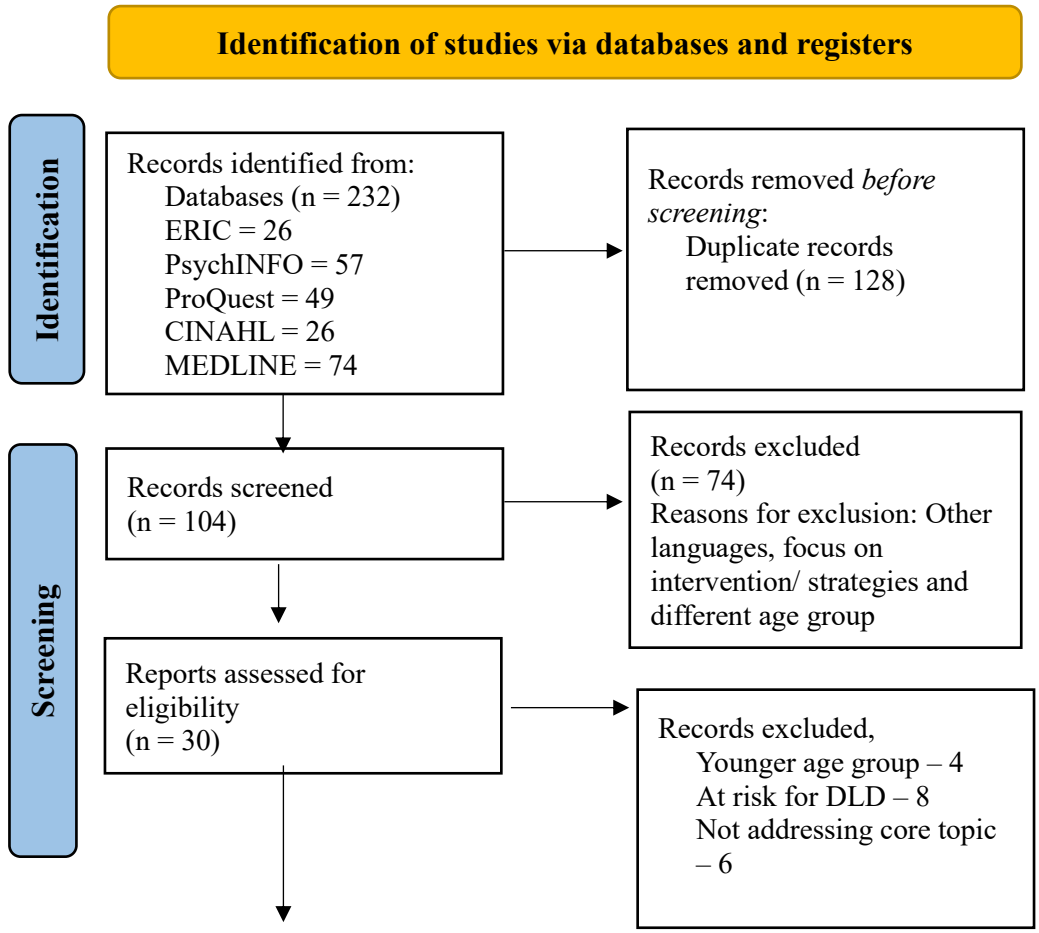
children, the trends from childhood to adolescence, the possible causes, and the secondary issues due to these challenges.

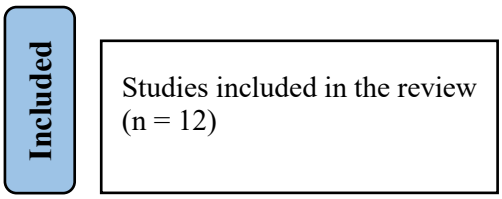
### 3.8. Ethical considerations

Scoping literature reviews are types of reviews that do not require data collection directly from participants, like in an empirical/ experimental study (Arksey & O'Malley, 2005). Therefore, confidentiality of information or privacy of data is not demanded. Important information, such as the opinions, perceptions, and comments of the authors from the original article, is to be considered. The method in which the study is conducted should be analysed with care to identify if there are ethical issues and if the author's opinions/ perspectives are not biased, resulting in low-quality articles. Finally, it is important to consider the ethical standards and the consent of participants in the articles (Arksey & O'Malley, 2005). This scoping review aims to include articles that have ethical approval and consent from all the participants who took part in the study.

**Figure 1**

*Detailed flow chart diagram (PRISMA for Scoping reviews)*






## 4.Results

### 4.1. Characteristics of Included Articles

The articles included for the scoping review were selected based on the inclusion and exclusion criteria, the aim of the study, and the research questions. It resulted in 12 articles that satisfied the criteria and were included in the study. All these included articles reported the emotional challenges of school-going children who were diagnosed with DLD. The date of publication of the articles ranged from 2018 to 2023, and they were from peer-reviewed journals. The general characteristics of the included articles are presented in **Table 3**.

Out of the 12 articles, seven studies were carried out in Europe, namely three in Spain, two in Finland, one in the Netherlands, and one in Germany; four studies in the United Kingdom (UK), and one study was done in the USA. The age range focused on in these articles mostly comprised children within 12 years, whereas the concentration of the adolescent age was only from three articles. The study designs of the articles were cross-sectional, longitudinal, qualitative, and mixed methods. The data collected in these studies were through online surveys, parent reports, teacher reports, self-reports, and through formal assessment tools, or consisted of a combination of these methods. The characteristics are presented in **Table 4**.

All of the articles confirmed the diagnosis of DLD in children. The articles also mentioned the different tools or questionnaires which were used for assessing emotional challenges and the formal language tools used to assess or screen language abilities and cognitive skills.

**Table 3**

*Overview of the Included Articles*

| S. No | Authors | Journal name | Title | Place |
|---|---|---|---|---|
| 1. | N. Ahufinger et al., 2025 | Acta Psychologica | Emotional Suffering in school-aged children and adolescents with and without DLD | Spain |
| 2. | Van den Bedem et al., 2018 | Journal of speech, language, and hearing research | Victimization, bullying, and emotional competence: longitudinal associations in pre-adolescents with and without DLD | Netherlands |
| 3. | Brinton et al.,2019 | Communication disorders quarterly | The Ability of Five Children with Developmental Language Disorder to Describe Mental States in Stories. | USA |
| 4. | Conti-Ramsden, G., & Pickles, A., et al., 2018 | European child and adolescent psychiatry | Do emotional difficulties and peer problems occur together from childhood to adolescence? The case of children with a history of DLD | UK |
| 5. | Loytomaki et al., 2020 | International journal of language communication disorders | The role of linguistic and cognitive factors in emotion recognition difficulties in children with ASD or ADHD, or DLD. | Finland |
| 6. | Loytomaki et al., 2022 | Journal of Autism and Developmental Disorders | Social, emotional and behavioural difficulties in children with neurodevelopmental disorders: emotion perception in daily life and in a formal assessment context. | Finland |

| | | | | |
|---|---|---|---|---|
| 7. | Bahn et al., 2020 | Journal of Speech, Language, and Hearing Research | A multimodal comparison of emotion categorization abilities in children with DLD | Germany |
| 8. | Valera et al., 2020 | Internation journal of environmental research and public health | Behavioral, Emotional, and School Adjustment in Adolescents with and without DLD is related to family involvement | Spain |
| 9. | Forrest et al., 2021 | International journal of environmental research and public health | Social functioning as a mediator between DLD and emotional problems in adolescents. | UK |
| 10. | Goh et al., 2021 | Journal of Abnormal Psychology | Sources of variability in the prospective relation of language to social, emotional, and behavioral problem symptoms: Implications for DLD | UK |
| 11. | Brurnley et al., 2023 | Journal of Neurodevelopmental Disorders | Understanding the prevalence and manifestation of anxiety and other socio-emotional and behavioral difficulties in children with DLD | UK |
| 12. | Aguliera et al., 2021 | Frontiers in Psychology | Vocabulary abilities and parents' emotional regulation predict emotional regulation in school-age children, but not adolescents with and without DLD | Spain |

* *Note:* All the above-mentioned articles are marked in the reference list (**)

### 4.2. Emotional challenges reported

**Table 5** describes in detail all the emotional challenges of children. The authors have classified these challenges into a few categories or by using specialized terminologies, such as internalizing and externalizing symptoms, polarity confusion, difficulties with both basic and complex emotions, and emotional suffering, all of which refer to mental or emotional distress resulting from various factors. Internalizing problems refer to the changes that occur within, such as anxiety, depression, panic, and worrying, which reflect more of the mental or psychological level. In contrast, externalizing problems refer to the behaviors exhibited, such as hyperactivity, inattention, aggressive behavior, and tantrums, which reflect more at the behavioral level. Polarity confusion refers to the difficulty children experience in distinguishing between positive and negative emotions, leading to misclassifications. Another way to categorize emotions is into basic/ neutral and complex emotions, with basic emotions including happiness, sadness, anger, fear, and surprise, while complex emotions encompass embarrassment and shame.

Nine articles reported that children have difficulties with emotional awareness/ understanding, emotional regulation, and emotional categorization. Emotional awareness is the difficulty in understanding or explaining how they are feeling or how the other person is feeling. Emotional dysregulation is the difficulty in the ability to respond to emotional experiences appropriately. Emotional categorization is the difficulty in differentiating emotions and classifying them into different categories. Problems with emotional competence describe difficulty with understanding, expressing, and regulating emotions. It is a holistic term that describes all the problems.

One article (Brunley et al., 2023) has reported on the different behavioral patterns that are observed in these children, which were incessant worry, seeking reassurance, nail biting, insisting on sameness, and comfort-seeking behaviors such as standing close to caregivers. These differences in the behaviours were suggested due to the difficulties present with emotional regulation.

**Table 4**

*Characteristics of the Included Articles*

| Author/ Year | Age range in the study | DLD diagnosis (Yes/No) | Study design | Data collection method |
|---|---|---|---|---|
| N. Ahufinger et al., 2025 | 6 to 7 years | Yes | Cross-sectional comparative observational study | Parent report |
| Van den Bedem et al., 2018 | 8 to 16 years | Yes | Prospective Longitudinal Comparative Cohort Study | Self-report |
| Brinton et al.,2019 | 6 to 11 years | Yes | Descriptive qualitative study | Self-report |
| Conti-Ramsden, G., & Pickles, A., et al., 2018 | 7 to 16 years | Yes | Prospective observational longitudinal study | Multi-informant approach (Teacher reports, parent interviews, and assessment) |
| Loytomaki et al., 2020 | 6 to 10 years | Yes | Cross-sectional comparative study | Parent reports and formal assessments |
| Loytmaki et al., 2022 | 6 to 10 years | Yes | Mixed methods design. | Formal assessments, parent report, and professional report (teachers, SLP, and OTs) |
| Bahn et al., 2020 | 6 to 10 years | Yes | Cross-sectional design | Assessments |
| Valera et al., 2020 | 6 to 12 years | Yes | Longitudinal design | Assessments and multiple informants (teachers, parents/ caregivers) and children. |
| Forrest et al., 2021 | 11 to 17 years | Yes | Cross-sectional observational design | Formal assessments, questionnaires, and online assessments. |

| | | | | |
|---|---|---|---|---|
| Goh et al., 2021 | 6 to 10 years | Yes | Prospective longitudinal cohort design | Teacher reports |
| Brurnley et al., 2023 | 6 to 12 years | Yes | Mixed methods | An online survey and an online interview with children |
| Aguliera et al., 2021 | 7 to 11 years | Yes | longitudinal two-wave design | Parent report and Self-report |

**Table 5**

*Detailed presentation of emotional challenges reported in the studies*

| Author/ Year | Emotional Challenges reported in the study |
|---|---|
| N. Ahufinger et al., 2025 | Anxious, depressed, withdrawn, aggressive behavior, thought problems, and attention problems |
| Van den Bedem et al., 2018 | Higher levels of fear, sadness, anger, and difficulties with emotional understanding. Victimization, bullying, and difficulties with emotional competence |
| Brinton et al.,2019 | Difficulties with perceiving and understanding emotions, understanding basic emotion words (happy, sad, or mad) were present, but there were difficulties pronounced with complex emotions. |
| Conti-Ramsden, G., & Pickles, A., et al., 2018 | High levels of mental health difficulties, such as anxiety, fearfulness, depressive symptoms, and panic. Difficulties with peer relations and friendships. |
| Loytomaki et al., 2020 | Difficulties with basic emotions (joy/ anger/ fear/surprise) and complex emotions (embarrassment/ ashamed) indicate problems with emotional understanding. |
| Loytomaki et al., 2022 | Difficulties with understanding basic emotions and neutral emotions indicate problems with emotional understanding. |
| Bahn et al., 2020 | Polarity confusions- distinguishing positive and negative stimuli, leading to misclassifying emotions and difficulties in categorizing and recognizing emotions. |

| | |
|---|---|
| Valera et al., 2020 | Worries, feelings of worthlessness, and emotional distress. Presence of internalized emotional difficulties such as depression and anxiety. |
| Forrest et al., 2021 | Negative emotion characteristics such as anxiety, depressive symptoms, lower mental well-being, and problems in emotion regulation. |
| Goh et al., 2021 | Emotional difficulties such as feelings of anxiety, sadness, worry, and emotional instability. |
| Brurnley et al., 2023 | Anxiety, incessant worry, seeking reassurance, nail biting, insisting on sameness, separation anxiety, and comfort-seeking behaviors, difficulties with social cues, emotional dysregulation (elevated levels of mood swings, over-excitement, and impulsivity), and problems with emotional understanding. |
| Aguliera et al., 2021 | Problems with emotional awareness and emotional regulation |

### 4.3. Trends from childhood to adolescence

To analyse how these evolve in children from their childhood to adolescence, the emotional challenges are analysed based on the age groups mentioned originally in the study to maintain the accuracy. Overlapping of age groups is present between the three divisions in **Table 6**. The first division focused till 10 years and the second division till 12 years (the starting age could not be redefined), and the third division till 17 years.

Five studies targeted age groups in the range of six to 10 years (Aufinger et al., 2025; Loytomaki et al., 2020; Loytomaki et al., 2022; Bahn et al., 2020; and Goh et al., 2021). These studies reported that children had difficulties with the identification and understanding of emotions, like basic and complex emotions, and polarity confusion (difficulties with positive and negative emotions). Aggression, worry, inattention, and thought problems, difficulties with emotional adaptation, and emotional instability were reported. The feeling of sadness and being anxious was reported in two studies.

Four studies targeted age groups till 12 years (Brinton et al., 2019; Valera et al., 2020; Brunley et al., 2023; and Aguilera et al., 2021). The emotional challenges reported in this study are separation anxiety, reassurance, feelings of worthlessness, mood swings, difficulty with peer relationships and social cues, social withdrawal, and problems with emotional understanding and emotional dysregulation. These problems are multifaceted and impact the children's social lives.

Three studies targeted age groups till 17 years (Conti-Ramsden & Pickles, 2018; Van den Bedem et al., 2018; and Forrest et al., 2021). The emotional challenges reported are depressive symptoms, anxiety, low self-esteem, victimization, bullying, difficulties with peer relations, friendships, emotional understanding, and reduced overall mental well-being. Problems with emotional regulation were present.

It can be seen that the emotional challenges are more behavioural and at the level of understanding and confusion during childhood, and have become more internalized during adolescence. It can be seen that their social life is impacted, affecting their overall well-being. Importantly, problems with emotional understanding have been noted to persist till adolescence and are consistently reported in all the studies.

### 4.4. Possible causes for emotional challenges

The possible causes for the mentioned emotional challenges are described in **Table 7**. All the studies included have reported that the language/ linguistic deficits are the underlying reason for the emotional challenges. Language deficits explained in these studies are the limited vocabulary of the children and the articulation difficulties (problems with expression). Few authors have also reported that these children have cognitive difficulties, which makes their emotional understanding difficult. Two studies have reported that the socioeconomic status of the family can lead to rising difficulties in these children. No articles reported gender differences.

Most of the studies included proved significant results when children with DLD were compared with the typically developing group of children in terms of their emotional skills. The typically developing children exhibited better performance in all the tasks, and their parents did not report any challenges faced by their children.

### 4.5. Secondary issues due to emotional challenges

From the included articles, it can be seen that the emotional challenges faced by these children result in several secondary issues in different domains. All the studies have reported on the secondary issues or problems that arise due to the emotional challenges. They are social withdrawal, social isolation, difficulties with peer relationships, victimization, bullying, and academic underachievement, all of which lead to the risk of mental health problems in adolescence.

The underlying reason stated for these is the emotional dysregulation and difficulties with emotional understanding which is persistently noted in all the studies. It can be clearly seen that the emotional challenges impact the social and the behavioral domains in these children.

**Table 6**

*Trends of the emotional challenges from childhood to adolescence*

| Age group | Authors/ year | Emotional Challenges reported | From childhood to adolescence |
|---|---|---|---|
| 6 to 10 years | Aufinger et al., (2025), Loytomaki et al., (2020), Loytomaki et al., (2022), Bahn et al., (2020) and Goh et al., (2021) | Difficulty with identification and understanding of basic and complex emotions, polarity confusion, aggression, worry, inattention and thought problems, sadness, feeling anxious, and emotional instability. | Challenges are exhibited in the behavioural form and starts from the level of understanding and confusions. |
| 6 to 12 years and 7 to 11 years | Brinton et al., (2019), Valera et al., (2020), Brunley et al., (2023) and Aguilera et al., (2021) | Separation anxiety, reassurance, comfort seeking behaviors, feelings of worthlessness, mood swings, difficulty with social cues and peer relationships, social withdrawal and emotional dysregulation and emotional understanding | Challenges are becoming multifaceted and it's starting to affect the social life. (Persisting difficulties with emotional understanding) |
| 7 to 16 years, 8 to 17 years and 11 to 17 years | Conti- Ramsden & Pickles, (2018), Van den Bedem et al., (2018) and Forrest et al., (2021) | Depressive symptoms, anxiety, low self- esteem, victimization, bullying, fearfulness, panic, difficulties with peer relations and friendships, emotional understanding, emotional dysregulation, and reduced overall mental well-being | Challenges are becoming more internalized, affecting their social life and mental well-being. (Persisting difficulties with emotional understanding) |

**Table 7**

*Possible causes for emotional challenges described in the study*

| Author/ Year | Causes for emotional challenges |
|---|---|
| N. Ahufinger et al., 2025 | Language communication challenges, social problems, and societal expectations. |
| Van den Bedem et al., 2018 | Difficulties in communication and a lack of social experiences. Lack of emotional competence (understanding and managing one's own emotions) makes these children vulnerable to victimization and emotional distress. |
| Brinton et al.,2019 | Difficulties with socio-emotional cognition. Limited vocabulary and language structure constrain their ability to articulate internal mental and emotional states. |
| Conti-Ramsden, G., & Pickles, A., et al., 2018 | Language and communication limitations, difficulties with social life, and with peer relationships. |
| Loytomaki et al., 2020 | Language deficits, theory of mind deficits, working memory difficulties, executive function impairments, and attention problems |
| Loytomaki et al., 2022 | Developmental delays and language delays are closely associated with emotional challenges. |
| Bahn et al., 2020 | Language deficits, developmental factors, and cognitive impairment |
| Valera et al., 2020 | Language difficulties affecting communication, social skills deficits, internalizing and externalizing behaviors, lower self-esteem and self-efficacy, behavioural regulation and emotional processing challenges. |
| Forrest et al., 2021 | Language delay, social difficulties and peer problems, limited social cognition and perception, and social isolation resulting in reduced peer support. |
| Goh et al., 2021 | Language impairment, socioeconomic status, social factors, and nonverbal cognitive abilities |
| Brurnley et al., 2023 | Communication challenges and language limitations, emotional dysregulation, cognitive differences, and difficulty understanding social cues (social cognition). |
| Aguliera et al., 2021 | Lower empathetic ability and difficulties in social interactions, language difficulties and vocabulary limitations, emotional awareness and processing, cultural and contextual factors, and family environment |

# 5. Discussion

## 5.1. Reflection on the findings

The study aimed to understand the emotional challenges in school-going children with DLD. The results of the studies revealed different emotional challenges faced by the children. The different ways these challenges have been described are emotional suffering, internalizing and externalizing problems, polarity confusion, and simple/ complex emotions, which are present in children with DLD coincide with the existing literature findings that these children are at a high risk of emotional difficulties (Baron-Cohen et al., 2009).

To see if the emotional challenges follow a trend from childhood to adolescence, the reported challenges in the study were analysed. It can be seen that when children are young, the problems are more concentrated, and as they grow, reach adolescence, they either intensify or start to impact other domains, making it challenging for the children, affecting their overall mental health. A study done by Yew and Kearney (2015) states that emotions revolve more around the parents, caregivers, or teachers during childhood. It is within the circle of people they come in contact with often, but as the children grow older (near adolescence), it also becomes more situation-oriented. This pattern can be seen from the challenges reported in our study where problems are more with emotional understanding and exhibited behaviourally at young age and as they grow older it becomes into problems which appear symptomatic (depression & anxiety), social (social isolation, social withdrawal, peer relationship difficulty, victimization & bullying) and emotional dysregulation.

The finding that more than 50% of the studies have reported the potential cause for the emotional challenges is the language difficulties of these children. Studies done by Irwin et al., (2002) and Voci et al., (2006) report that language difficulties impact emotional well-being. This is due to their limited vocabulary and articulation difficulties, which restrict their verbal output, making it difficult at various levels of their everyday lives and thereby impacting their mental health, resulting in emotional challenges.

These deficits lead to secondary issues like impacting the social and behavioural domains, which make regulating emotions in socially appropriate ways difficult, leading to social isolation, withdrawal, and issues with peer relationships (St. Clair et al., 2019). These problems also make it hard for these children to excel academically, resulting in educational struggles. Evidence from the literature shows that it becomes a multidimensional issue in

these children (as one leading to the other) and is not limited to just emotional awareness or recognition, or categorisation (St Clair et al., 2011; Cicchetti, 2016).

Children with DLD have displayed various behaviours like incessant worry, seeking reassurance, nail biting, a preference for sameness, and comfort-seeking behaviours such as standing close to caregivers, which have been reported. These behaviours are exhibited due to the ongoing language deficits and difficulties present with understanding the cues, as language plays a vital role in children's emotional and social development (Esenkaya et al., 2021). These patterns reveal their difficulties or insecurities.

### 5.2. Relating to the Biopsychosocial (BPS) Model by Engell (1977)

The biopsychosocial model proposed by Engell in 1977 was due to the limitations in the widely used biomedical model, which focuses only on the biological factors (e.g., medical diagnosis). It lacks the accountability of the psychological and social factors, which are crucial and should be included during the diagnosis and the intervention process.

The biological factors, such as language limitations, linguistic deficits, cognitive impairments, and issues with articulation, directly impact the psychological and social functioning of the children. The psychological factors include emotional characteristics like difficulties with emotional competence, as well as internalizing and externalizing problems, which heighten the risk of social issues. The interplay between biological and psychological factors presents challenges, including difficulties in peer relationships, social isolation, and inadequate emotional reciprocity. This creates a triangle of symptoms where each aspect influences the others.

Applying the model (Engell, 1977) to our current study, it can be seen that the children are exhibiting emotional challenges because of the persistent language deficits. These difficulties are prominent even when the interventions solely focus on improving their language deficits. Incorporating aspects of emotional development along with language interventions would improve the effectiveness. A multidisciplinary approach or a tailor-made intervention program for the children, addressing their deficits in other dimensions (emotional/ social) along with language problems, would positively impact the quality of life of the children, which would make them better individuals in managing their emotional well-being.

### 5.3. Reflections on the methodology

All the articles included were from peer-reviewed journals in English. The articles considered in the study were published between 2018 and 2023, which explains the use of terminology that was widely accepted in 2017 by the DLD consortium. The inclusion criteria for diagnosing DLD in children were strict, excluding articles that studied children at risk of DLD. Most of the articles were from Europe, the United States of America, and the United Kingdom. A study conducted by Kim et al., (2023) in Australia reveals that only 19.9% of the population were aware of DLD compared to other neurodevelopmental disorders like ASD or ADHD, with the prior terminology, specific language impairment, garnering even less awareness (9.4%). Potential reasons include a lack of awareness about the disorder or difficulties in understanding the terminology, which may affect the identification of children with DLD, aligning with existing literature (McGregor, 2020).

Despite the inclusion criteria for age being from six years to 17 years, the concentration of the adolescent age group was limited to only three studies, whereas the majority have studied from six years to 10 and 12 years, which leads to a significant gap. There was a diverse group of study designs, which was noted from the included articles, and also the data collection methods included parent reports, self-reports, teachers' reports, and formal assessments. This would potentially help in better understanding the emotional challenges of children with DLD.

One important shortcoming of a scoping review is that it is not mandatory to do quality assessments of the included articles for the study, which could potentially increase the risk of bias. A limited period is allocated to the researcher to carry out the study; thus, carrying out the quality check and selection of articles was done single-handedly. Although the criteria for inclusion and exclusion of articles were decided along with the words for the search strings could have led to the exclusion of some articles. The use of active filters like peer-reviewed journals, English language, diagnosis, and the specific age range might have excluded a few articles.

## 6. Conclusions

The present scoping review aimed to understand emotional challenges of school-going children with DLD. It included 12 articles, which were analysed, and the results revealed the various emotional challenges faced by the children due to their language and cognitive impairments. The emotional challenges were internalizing problems like anxiety,

depression, panic, and feelings of emotional withdrawal, and externalizing problems like aggression, inattention, and hyperactivity. The children have a prominent deficit in their emotional competence, which includes areas of emotional awareness, regulation, and categorisation. From all the included studies, it can be seen that the emotional challenges are intricately linked to the language deficits. Changes at the level of the interventions would result in increasing the effectiveness.

- Implementation of early emotional screening along with language screening to identify deficits in that domain.
- School-based socio-emotional intervention or sessions focusing on emotional symptoms/challenges alongside language intervention would help them in handling social situations appropriately (e.g., two sessions focusing on language intervention, along with one session focusing on the socio-emotional challenges weekly)
- A multidisciplinary approach, including the speech language pathologist, psychologists, teachers, special educators, and parents, will help with a better prognosis.

## 7. Future research

From this scoping review, several ideas for future research can be seen. It can be seen that the adolescent age group, especially the teenage years of the children, needs more research in terms of language, emotional, and social domains. These years play a very important role in shaping them for adulthood, so addressing them would add more information. Another area is research on a global perspective about the disorder, as there were geographical restrictions identified in this review. Studies focusing on each country's perspectives, prevalence, diagnosis methods, and intervention techniques would add more insights in terms of professional developments and the awareness about the disorder. Finally, the implementation of a holistic intervention model, inclusive of language and psychosocial factors, and analysing its efficacy would lead to a breakthrough in redefining the interventions for children with DLD. The importance of interventions in childhood should be considered, as it helps in the management of the disorder in a better way by helping parents through professional help. These aspects can also be studied through various research strategies.

## 8. References

**Aguilera, M., Ahufinger, N., Esteve-Gibert, N., Ferinu, L., Andreu, L., & Sanz-Torrent, M. (2021). Vocabulary abilities and Parents' emotional regulation predict emotional regulation in School-Age children but not adolescents with and without developmental language disorder. *Frontiers in Psychology*, *12*. https://doi.org/10.3389/fpsyg.2021.748283

**Ahufinger, N., Aguilera, M., Guerra, E., Giberga, A., Verdaguer-Ribas, O., Balboa-Castells, R., Andreu, L., Esteve-Gibert, N., & Sanz-Torrent, M. (2025). Emotional suffering in school-aged children and adolescents with and without developmental language disorder. *Acta Psychologica*, *255*, 104927. https://doi.org/10.1016/j.actpsy.2025.104927

Arksey, H., & O'Malley, L. (2005). Scoping studies: towards a methodological framework. *International Journal of Social Research Methodology*, *8*(1), 19–32. https://doi.org/10.1080/1364557032000119616

**Bahn, D., Vesker, M., Schwarzer, G., & Kauschke, C. (2021). A multimodal comparison of emotion categorization abilities in children with developmental language disorder. *Journal of Speech Language and Hearing Research*, *64*(3), 993–1007. https://doi.org/10.1044/2020_jslhr-20-00413

Baron-Cohen, S., Golan, O., & Ashwin, E. (2009). Can emotion recognition be taught to children with autism spectrum conditions? *Philosophical Transactions of the Royal Society B Biological Sciences*, *364*(1535), 3567–3574. https://doi.org/10.1098/rstb.2009.0191

Bishop, D. V. M. (2017). Why is it so hard to reach agreement on terminology? The case of developmental language disorder (DLD). *International Journal of Language & Communication Disorders*, *52*(6), 671–680. https://doi.org/10.1111/1460-6984.12335

Bishop, D. V. M., Snowling, M. J., Thompson, P. A., & Greenhalgh, T. (2016). CATALISE: A multinational and multidisciplinary Delphi consensus study. identifying language impairments in children. *PLoS ONE*, *11*(7), e0158753. https://doi.org/10.1371/journal.pone.0158753

Bishop, D. V., Snowling, M. J., Thompson, P. A., & Greenhalgh, T. (2017b). Phase 2 of CATALISE: a multinational and multidisciplinary Delphi consensus study of problems with language development: Terminology. *Journal of Child Psychology and Psychiatry*, *58*(10), 1068–1080. https://doi.org/10.1111/jcpp.12721

**Brinton, B., Fujiki, M., & Asai, N. (2018). The ability of five children with developmental language disorder to describe mental states in stories. *Communication Disorders Quarterly*, *40*(2), 109–116. https://doi.org/10.1177/1525740118779767

**Burnley, A., St Clair, M., Bedford, R., Wren, Y., & Dack, C. (2023). Understanding the prevalence and manifestation of anxiety and other socio-emotional and behavioural difficulties in children with Developmental Language Disorder. *Journal of Neurodevelopmental Disorders*, *15*(1). https://doi.org/10.1186/s11689-023-09486-w

Calder, S. D., Brennan-Jones, C. G., Robinson, M., Whitehouse, A., & Hill, E. (2022). The prevalence of and potential risk factors for Developmental Language Disorder at 10 years in the Raine Study. *Journal of paediatrics and child health*, *58*(11), 2044–2050. https://doi.org/10.1111/jpc.16149

Cicchetti, D. (Ed.). (2016). *Developmental psychopathology, theory and method* (Vol. 1). John Wiley & Sons.

**Conti-Ramsden, G., Mok, P., Durkin, K., Pickles, A., Toseeb, U., & Botting, N. (2018). Do emotional difficulties and peer problems occur together from childhood to adolescence? The case of children with a history of developmental language disorder (DLD). *European Child & Adolescent Psychiatry*, *28*(7), 993–1004. https://doi.org/10.1007/s00787-018-1261-6

Conti-Ramsden, G., Mok, P. L., Pickles, A., & Durkin, K. (2013). Adolescents with a history of specific language impairment (SLI): Strengths and difficulties in social, emotional and behavioral functioning. *Research in Developmental Disabilities*, *34*(11), 4161–4169. https://doi.org/10.1016/j.ridd.2013.08.043

Conti-Ramsden, G., & Durkin, K. (2012). Language development and assessment in the preschool period. *Neuropsychology review*, *22*(4), 384–401. https://doi.org/10.1007/s11065-012-9208-z

Elbro, C., Dalby, M., & Maarbjerg, S. (2011). Language-learning impairments: a 30-year follow-up of language-impaired children with and without psychiatric, neurological and cognitive difficulties. *International Journal of Language & Communication Disorders*, *46*(4), 437–448. https://doi.org/10.1111/j.1460-6984.2011.00004.x

Engel, G. L. (1977). The need for a new medical model: a challenge for biomedicine. *Science*, *196*(4286), 129–136. https://doi.org/10.1126/science.847460

Feeney, R., Desha, L., Ziviani, J., & Nicholson, J. M. (2011). Health-related quality-of-life of children with speech and language difficulties: A review of the literature. *International Journal of Speech-Language Pathology*, *14*(1), 59–72. https://doi.org/10.3109/17549507.2011.604791

**Forrest, C. L., Gibson, J. L., & St Clair, M. C. (2021). Social Functioning as a Mediator between Developmental Language Disorder (DLD) and Emotional Problems in Adolescents. *International Journal of Environmental Research and Public Health*, *18*(3), 1221. https://doi.org/10.3390/ijerph18031221

**Goh, S. K. Y., Griffiths, S., & Norbury, C. F. (2021). Sources of variability in the prospective relation of language to social, emotional, and behavior problem symptoms: Implications for developmental language disorder. *Journal of Abnormal Psychology*, *130*(6), 676–689. https://doi.org/10.1037/abn0000691

Irwin, J. R., Carter, A. S., & Briggs-Gowan, M. J. (2002). The Social-Emotional development of "Late-Talking" toddlers. *Journal of the American Academy of Child & Adolescent Psychiatry*, *41*(11), 1324–1332. https://doi.org/10.1097/00004583-200211000-00014

Kim, J., Davies, B., & Rattanasone, N. X. (2022). Have you heard of developmental language disorder? an online survey. *Communication Disorders Quarterly*, *44*(4), 228–238. https://doi.org/10.1177/15257401221115822

Lloyd-Esenkaya, V., Forrest, C. L., Jordan, A., Russell, A. J., & St Clair, M. C. (2021). What is the nature of peer interactions in children with language disorders? A qualitative study of parent and practitioner views. *Autism & Developmental Language Impairments*, *6*. https://doi.org/10.1177/23969415211005307

**Löytömäki, J., Laakso, M., & Huttunen, K. (2022). Social-Emotional and Behavioural Difficulties in Children with Neurodevelopmental Disorders: Emotion Perception in

Daily Life and in a Formal Assessment Context. *Journal of Autism and Developmental Disorders*, *53*(12), 4744–4758. https://doi.org/10.1007/s10803-022-05768-9

**Löytömäki, J., Ohtonen, P., Laakso, M., & Huttunen, K. (2019). The role of linguistic and cognitive factors in emotion recognition difficulties in children with ASD, ADHD or DLD. *International Journal of Language & Communication Disorders*, *55*(2), 231–242. https://doi.org/10.1111/1460-6984.12514

Lyons, R. (2021). Impact of language disorders on children's everyday lives from 4 to 13 years: Commentary on Le, Mensah, Eadie, McKean, Schiberras, Bavin, Reilly and Gold (2020). *Journal of Child Psychology and Psychiatry*, *62*(12), 1485–1487. https://doi.org/10.1111/jcpp.13391

Mak, S., & Thomas, A. (2022). Steps for Conducting a Scoping Review. *Journal of graduate medical education*, *14*(5), 565–567. https://doi.org/10.4300/JGME-D-22-00621.1

McGregor K. K. (2020). How We Fail Children with Developmental Language Disorder. *Language, speech, and hearing services in schools*, *51*(4), 981–992. https://doi.org/10.1044/2020_LSHSS-20-00003

Norbury, C. F., Gooch, D., Wray, C., Baird, G., Charman, T., Simonoff, E., Vamvakas, G., & Pickles, A. (2016). The impact of nonverbal ability on prevalence and clinical presentation of language disorder: evidence from a population study. *Journal of Child Psychology and Psychiatry*, *57*(11), 1247–1257. https://doi.org/10.1111/jcpp.12573

Nudel, R., Chrsitensen, R. V., Kalnak, N., Lundberg, M., Schwinn, M., Sørensen, E., Mikkelsen, C., Nissen, J., Christoffersen, L. a. N., Kjerulff, B. D., Hansen, T. F., Burgdorf, K. S., Pedersen, O. B. V., Erikstrup, C., Gísladóttir, R. S., Walters, G. B., Stefánsson, H., Ostrowski, S. R., & Werge, T. (2024). Developmental language disorder – heritability and genetic correlations with other disorders affecting language. *Psychiatry Research*, *342*, 116212. https://doi.org/10.1016/j.psychres.2024.116212

Plug, M. B., Van Wijngaarden, V., De Wilde, H., Van Binsbergen, E., Stegeman, I., Van Den Boogaard, M. H., & Smit, A. L. (2021). Clinical characteristics and genetic etiology of children with developmental language Disorder. *Frontiers in Pediatrics*, *9*. https://doi.org/10.3389/fped.2021.651995

Richardson, W. S., Wilson, M. C., Nishikawa, J., & Hayward, R. S. (1995). The well-built clinical question: a key to evidence-based decisions. *Acp j club, 123(3), A12-A13*. https://doi.org/10.7326/ACPJC-1995-123-3-A12

Stanley, F. (2011). Vygotsky—From public to private: Learning from personal speech. In T. Waller, J. Whitmarsh, & K. Clarke (Eds.), *Making sense of theory and practice in early childhood* (pp. 11–25). Open University Press.

St Clair, M. C., Forrest, C. L., Yew, S. G. K., & Gibson, J. L. (2019). Early risk factors and emotional difficulties in children at risk of developmental language Disorder: a population cohort study. *Journal of Speech Language and Hearing Research*, *62*(8), 2750–2771. https://doi.org/10.1044/2018_jslhr-l-18-0061

St Clair, M. C., Pickles, A., Durkin, K., & Conti-Ramsden, G. (2010). A longitudinal study of behavioral, emotional and social difficulties in individuals with a history of specific language impairment (SLI). *Journal of Communication Disorders*, *44*(2), 186–199. https://doi.org/10.1016/j.jcomdis.2010.09.004

**Valera-Pozo, M., Adrover-Roig, D., Pérez-Castelló, J. A., Sanchez-Azanza, V. A., & Aguilar-Mediavilla, E. (2020). Behavioral, Emotional and School Adjustment in Adolescents with and without Developmental Language Disorder (DLD) Is Related to Family Involvement. *International Journal of Environmental Research and Public Health*, *17*(6), 1949. https://doi.org/10.3390/ijerph17061949

**Van Den Bedem, N. P., Dockrell, J. E., Van Alphen, P. M., Kalicharan, S. V., & Rieffe, C. (2018). Victimization, Bullying, and Emotional Competence: Longitudinal associations in (Pre)Adolescents with and without developmental language disorder. *Journal of Speech Language and Hearing Research*, *61*(8), 2028–2044. https://doi.org/10.1044/2018_jslhr-l-17-0429

Voci, S. C., Beitchman, J. H., Brownlie, E., & Wilson, B. (2006). Social anxiety in late adolescence: The importance of early childhood language impairment. *Journal of Anxiety Disorders*, *20*(7), 915–930. https://doi.org/10.1016/j.janxdis.2006.01.007

Widen, S. C. (2016). The development of children's concepts of emotion. In L. Feldman Barrett, M. Lewis, & J. M. Haviland-Jones (Eds.), Handbook of emotions (4th ed., pp. 307–318). The Guilford Press.

Yew, S. G. K., & O'Kearney, R. (2015). The Role of Early Language Difficulties in the Trajectories of Conduct Problems Across Childhood. *Journal of abnormal child psychology*, *43*(8), 1515–1527. https://doi.org/10.1007/s10802-015-0040-9

# 9. Appendix

## Data Extraction Protocol

1. Year of publication
2. Journal name
3. Authors
4. Author's name citation
5. Title of the study
6. APA reference/ DOI number
7. Place of study
8. Aim of the study
9. Purpose of the study
10. Age range focused
11. Age range distribution
12. DLD diagnosis (Yes/No)
13. Study design
14. Ethical consent of the study (Yes/ No)
15. Tools used for assessment of emotional challenges
16. Other assessments done (Language/ Cognitive)
17. Mode of data collection (parent report/ online survey/ interview/ teacher report/ self-reports)
18. How have they defined the emotional challenges in the study
19. Characteristics of the tools/ test used
20. What are the emotional challenges reported
21. Is there any percentage/ number mentioned among the chosen population
22. What are the possible causes mentioned in the study
23. Any gender differences reported
24. How have they associated these challenges and causes (views from the discussion was taken as a summary)
25. Limitations reported
26. Conclusions of the study