

Contextual factors influencing communicative participation in children with developmental language disorder

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LIST OF ABBREVIATIONS

CP	Communicative participation
DLD	Developmental language disorder
FG	Focus group
HU	HU University of Applied Sciences Utrecht
ICF-CY	The International Classification of Functioning Disability and Health-Children & Youth
SLTs	Speech-language therapists
SSD	Speech sound disorder
TD	Typically developing

Abstract

Background: Developmental language disorder (DLD) is a common disorder of genetic origin in children frequently leading to restrictions in communicative participation (CP). Despite similar language profiles children with DLD can perform very differently in everyday communicative situations, while reasons for this remain unknown. CP is an essential outcome and aim of speech-language therapy. To optimise CP, knowledge about the contextual (personal and environmental) factors that might influence CP is essential. This study explores Dutch speech-language therapists (SLTs) beliefs, to identify contextual factors affecting CP, because experienced SLTs may offer substantial insights of relevance.

Aim: Exploring Dutch SLTs' beliefs regarding personal and environmental factors influencing CP in children with DLD, aged 3-8 years.

Methods & Procedures: Interpretive description served as the qualitative methodological approach. For data collection, focus groups with a purposive sample of SLTs from various settings were organised. A thematic analysis method was used inductively to analyse the data.

Outcomes & Results: 22 SLTs, experienced in treatment of children with DLD, participated in three focus groups. Seven themes emerged from the data: "safety at home", "parenting skills", "isolation", "behaviour of others", "knowledge about children's abilities and needs", "child characteristics", and "CP as a dynamic development process". The identified contextual factors interact and can affect CP and CP-development

Conclusions & Implications: The SLT's assessment should include not only a child's linguistic skills but also the personal and environmental factors related to CP as reflected in the themes. Thus, contextual factors of concern can be identified to set personalised intervention goals for each child, aimed at optimising CP. Future research could focus on exploring parental and children's perspectives on contextual factors influencing CP.

Keywords: Developmental language disorder, communicative participation, speech-language therapy

Nederlandse samenvatting

Achtergrond: Een taalontwikkelingsstoornis (TOS) is een veelvoorkomende stoornis bij kinderen, van genetische oorsprong, die vaak leidt tot beperkingen in de communicatieve redzaamheid (CR). Ondanks vergelijkbare taalprofielen kunnen kinderen met TOS in dagelijkse communicatieve situaties heel anders presteren, terwijl redenen hiervoor onbekend blijven. CR is een essentiële uitkomst en doel voor spraak-taal therapie. Om de CR te optimaliseren is kennis over context (persoonlijke en omgevingsfactoren) factoren die de CR kunnen beïnvloeden, essentieel. Deze studie verkent de overtuigingen van Nederlandse logopedisten om context factoren te identificeren die van invloed zijn op de CR, omdat ervaren logopedisten essentiële, relevante inzichten kunnen bieden

Doel: Het verkennen van de overtuigingen van Nederlandse logopedisten met betrekking tot persoonlijke en omgevingsfactoren die van invloed zijn op de CR van kinderen met TOS van 3-8 jaar.

Methode & procedures: Interpretatieve beschrijving diende als kwalitatieve methodologische benadering. Voor de dataverzameling werden focusgroepen georganiseerd met een doelgerichte steekproef logopedisten, werkzaam in verschillende instellingen. Er werd een thematische data-analyse methode gebruikt om de data inductief te analyseren.

Uitkomsten & resultaten: 22 logopedisten, ervaren in de behandeling van kinderen met TOS, namen deel aan drie focusgroepen. De gegevens resulteerde in zeven thema's: "veiligheid thuis", "ouderschapsvaardigheden", "isolement", "gedrag van anderen", "kennis over de capaciteiten en behoeften van kinderen", "kind-karakteristieken" en "CR als een dynamisch ontwikkelingsproces". De geïdentificeerde context factoren werken op elkaar in en kunnen van invloed zijn op de CR en de ontwikkeling van CR.

Conclusies & implicaties: Het onderzoek van een logopedist zou niet alleen rekening moeten houden met de taalvaardigheid van een kind maar ook met de persoonlijke en omgevingsfactoren die verband houden met de CR, zoals die in de thema's tot uiting komen. Zo kunnen context factoren, die aanleiding geven tot zorg, worden geïdentificeerd om gepersonaliseerde interventiedoelstellingen voor elk kind vast te stellen, gericht op het optimaliseren van de CR. Toekomstig onderzoek zou zich kunnen richten op het verkennen van de perspectieven van ouders en kinderen omtrent context factoren die van invloed zijn op de CR.

Sleutelwoorden: Taalontwikkelingsstoornissen, communicatieve redzaamheid, spraak-taal therapie

Introduction

Children's participation in daily activities is a known indicator of health and well-being.¹ Through involvement in various activities, children acquire the skills and knowledge needed to play and learn.² However, children with developmental language disorder (DLD) seem to be less involved in everyday activities than their typically developing peers (TD-peers).³

DLD is a neurobiological developmental disorder of genetic origin that affects approximately 7% of five-year-olds.^{4,6} DLD might affect both receptive and expressive language in all domains and modalities.^{5,6} Children with DLD are often restricted in communicative participation (CP) at home and school, due to their language impairment.^{6,7} CP is defined as "understanding and being understood by using verbal and non-verbal communication skills in a social context".⁸ CP is an essential outcome for children with DLD and an important aim of speech-language therapy.^{9,10} However, the impact of DLD on CP is not equal for all children.¹¹ Moreover, improved language test scores do not translate directly to improved CP.^{7,12} This suggests that the language profile may not fully explain variations in CP.

The International Classification of Functioning Disability and Health-Children & Youth (ICF-CY) can be used to gain insight into factors influencing CP.¹ ICF-CY conceptualises functioning and disability as a dynamic interaction between a child's health condition and its contextual factors.¹ Contextual factors consist of two components: personal and environmental factors. Personal factors are defined as "the particular background of an individual's life and living."¹ Environmental factors make up "the physical, social, and attitudinal environment in which people live and conduct their lives."¹ Contextual factors might positively or negatively influence CP of children with DLD.¹ Some contextual factors relevant to children with DLD have been described in literature (e.g., attitudes, relationships within context, parental stress)¹³⁻¹⁵ but scientific papers on this subject are limited.¹⁶ Identifying contextual factors leads to clinically important knowledge that can be used to assess specific factors affecting an individual child's CP. Subsequently, these factors can be used to set personalised intervention goals and to make care plans with parents.^{7,12,17-19} Additionally, identifying contextual factors is socially relevant. By addressing these factors in therapy, CP and as a consequence social participation may improve which is associated with a higher quality of life.^{2,3,20}

A comprehensive overview of contextual factors affecting CP in children with DLD is not available. However, experienced speech-language therapists (SLTs) may offer substantial insights of relevance. SLTs are involved in the identification, assessment, and treatment of children with DLD, and the coaching of their parents and teachers. SLTs' experiential knowledge can provide meaningful information about this subject. Therefore, this study investigates practical information by collecting qualitative data from SLTs regarding their beliefs about contextual factors influencing CP. This practical information can ultimately inform clinical practice. This study focuses on SLTs working with children with DLD, in various settings, and addresses the following research question: Which environmental and personal factors, influence CP in children 3-8 years with DLD, according to SLTs?

Methods

Design

Interpretive description (ID) served as the qualitative methodological approach for this study.²¹⁻²³ The objective of ID is to address questions relevant to the applied clinical practice. To create findings, based on practical and theoretical knowledge, aimed to inform the practice field so that the findings may be applied.²¹⁻²³ Various methods for data collection and analysis can be used.²¹⁻²³ This study's research question is essential for professionals providing therapy to children with DLD. Professionals with clinical knowledge about CP were recruited by purposive sampling. Focus groups (FGs) were organised for data collection because the discussions generate information about participants' personal and collective views, and the motivations underpinning these.²⁴ The procedure is shown in a flow chart (figure 1). The findings are presented according to consolidated criteria for reporting qualitative research (COREQ).²⁵

Sampling procedure

The study invited native Dutch SLTs with at least two years of experience of providing therapy to children with DLD, aged 3-8 years or coaching their parents. Invitations to participate were placed on social media. In addition, schools, health institutes, and SLT-therapy networks in the region of Utrecht and Zevenaar were approached by e-mail. Selection of SLTs willing to participate in the study was performed via purposive sampling, so as to obtain diversity relating to work experience, work setting, age of supported children, and work area.²⁶ Diversity of participant characteristics invites a wider variety of views and therefore enriches data. Three FGs were planned with five to ten participants each.²⁷

Setting

All FGs took place in quiet educational spaces in Utrecht, Amsterdam, and Zevenaar to provide a confidential environment where participants would feel welcome, safe, and encouraged to contribute.

Data collection

Three FGs were organised in March 2019. Generative techniques were used to increase personal input during discussions.²⁸ Participants received a sensitising task before participating in discussions. Using a brief description of two cases of children with DLD, the task stimulated reflection on experiences with CP in participants' clinical practice.⁸ Participants were invited to determine contextual factors that, in their opinion, might influence CP and noted these factors for reference during the discussions (appendix 1). During the two-hour discussion phase participants were again asked to write down the factors they considered relevant to each main question posed and explain these verbally. All discussions were video recorded. The first researcher facilitated all three discussions, while a second researcher assisted, took notes, and asked follow-up questions. Each discussion included an introduction to the study, clarification of discussion aims, and rules regarding participation. Essential concepts were clarified to avoid ambiguous interpretation. To

ensure consistency, a semi-structured interview guide was used, defined through engagement with the research literature (appendix 2).^{1,29}

Data-analysis

The process of data-analysis was iterative and supported by thematic analysis.³⁰ The latter consisted of five analytic phases and was carried out using Nvivo (v12pro).

(1) Verbatim transcriptions of recorded discussions, sense checking, and initial consideration by the first researcher.

(2) Inductive analysis of data by the first researcher. Meaningful items in data were coded, and continuously compared to verify correct and exclusive use of codes.

(3) Codes were analysed, grouped into potential themes, and illustrated with participants' quotes, by the first researcher. Mindmaps were used to interpret and record relationships between codes and themes. A provisional coding structure was developed based on established themes and codes.

(4) The provisional coding structure was evaluated by five researchers of HU University of Applied Sciences Utrecht (HU) by coding a transcript sample. The coding structure was discussed and after that, fine-tuned by merging and expanding themes resulting in a revised overview of themes and codes (appendix 3).

(5) Definitions and terminology were established for each theme. A member check was carried out. Therefore participants received extracts of transcripts and an overview of the provisional findings.

Ethics

This study was approved by the Institutional Review Board of HU (number: 89_000_2019). The Dutch Medical Research Involving Human Subjects Act was not applicable. The study was performed in accordance with the Helsinki Declaration and the General Protection Regulation.³¹ Before data collection, participants gave written consent to use their data. Participation in the study was voluntary, and participants could withdraw at any time without explanation. Participants were rewarded for their efforts with two points for the Quality Register of SLTs of Allied Healthcare Professionals.

Results

22 SLTs, professionally engaged in various settings participated in this study. All met predetermined inclusion criteria, and their characteristics are outlined in table 1.

In every FG, all interview questions were discussed. Data saturation may have been achieved given the significant amount of repetition and consensus of themes across the groups. Participants' beliefs are described using a structure of seven main themes that emerged from the data. Five themes describing environmental factors were: "safety at home", "parenting skills", "isolation", "behaviour of others", and "knowledge about children's abilities and needs". The theme, "Child characteristics" describes personal factors. Finally, an overarching theme was identified labelled as "CP as a dynamic development process". A member check was carried out to ensure that the themes were a correct representation of the discussion. Based on the feedback, terminology for one theme was adjusted without consequences for the final results. The themes are shown in figure 2. The themes and subthemes, along with some codes, to clarify those

themes, are outlined below and illustrated with quotes. The relations between the themes are set out in more detail in appendix 4.

Theme 1: Safety at home

Safety at home was identified as a critical factor influencing CP. Participants emphasised that safety means, no stress caused by 'real' problems such as an illness that may lead to uncertainty. Safety also involves time and attention given to the child. Participants believed this to be prerequisites for learning communication skills and for expressing themselves. They stressed that children with DLD cannot verbally compensate to cope with unsafe situations(P20,P16;P17).

"In families with multiple problems such as: illness, low socio-economic status, or parents without work, the child with DLD will have a hard time. It is difficult for every child, but the child with DLD has extra hard time. The child cannot verbally compensate to cope with that situation. The child might withdraw or display behavioural problems."(P20)

"Involvement with the child is essential. The child needs time to talk to the parents so that the child can express him or herself, and also understand what parents say."(P16)
"Parents with problems are often unable to talk in that way because they are surviving. The situation is not safe, and parents behaviour is not predictable while the child with DLD needs to experience that in order to develop communicative skills."(P17)

Theme 2: Parenting skills

Parenting skills were also identified as environmental factors. Especially parents' ability to provide a supportive communication style and to facilitate engaging activities to enhance CP were emphasised.

Parental communication style

The way parents communicate with their children was discussed during the FGs, since young children experience parents as the central factor in their life. Participants believed that the parental communication style influences a child's engagement during conversations and can enhance CP. They identified three types of parents and their three communication styles that vary in the amount of support they give to the child while communicating, the number of opportunities provided for the child to converse, and in parental 'demands' while communicating.

First, participants talked about 'supportive parents' who view their child's possibilities and at the same time understand his (male pronouns will be used to refer to a child) struggles(P8). These parents focus on a child's message, thus creating engagement. The child experiences opportunities to communicate, thus potentially stimulating CP. 'Supportive parents' give the child confidence by knowing his parents will be there when needed(P1).

"Parents who understand their child. They see that the child is not able to talk, to express himself. The parents see that their child wants to talk but is not capable."(P8)

"As a parent, you are not just focussing on language but the message as well. What is my child trying to tell me? Have trust. As a parent, constantly let them know: 'you can do it, just try it'."(P1)

Secondly, participants mentioned 'take over parents', who do things for their child that he could do for himself (e.g., dressing or talking). Parents' communication style may reduce a child's opportunities to express his own needs and thoughts, to practice verbal skills, and to learn from failure, which may negatively affect CP(P3).

"There are parents who, when the child does not speak, do the talking for their child. Parents who continue to do so, even when in time, the child can speak. They continue to be an interpreter for their child, which I think does not improve the child's self-confidence in regards to language. It is just essential for every child to be stimulated to talk. Some parents want to do everything for their child. Not only concerning language, but they dress the child as well... At some point, you can see the child think: I did not want to say that." (P3)

Finally, participants described 'demanding parents'. They want what is best for their child, but overload him with exercises to improve communication skills. These parents may have high expectations that their child is unable to meet. Children of 'demanding parents' experience reduced opportunities for verbal initiatives and conversations with their parents, may not feel valued, might develop a decreased desire to share information, thus negatively affecting CP(P16,P2;P6).

"I am thinking about what the underlying cause might be, maybe how hard the parents are trying. There is a mother... nice parents,... with a boy who has minimal verbal skills. Now, during the therapy, mom is no longer sitting next to him... because I did not get much response from the boy when she was there. It turns out that this loving mother ... unconsciously puts pressure on her son. The boy knows how important it is for her that he can talk well. This feeling does not give him the freedom to talk...I also know some mothers who are really on top of things, the more therapy, the better. Mothers, who are driven, who provide information to their children but do not have a conversation with them. They do want their children to learn and work hard. Vocabulary is what they find the most important."(P16)

"If you do not get the opportunities to talk, ... then you will not have the chance to take the initiative you might want to take."(P2) "Even more fundamental, the child does not feel seen or heard and develops less desire to share what the child perceives important, which is the basis of communication."(P6)

Facilitating engaging activities

Participants stressed the importance of engaging activities (e.g., visiting grandparents) to encourage meaningful communicative behaviour in daily life and offer opportunities to observe verbal role models(P9;P10).

"We had a school trip, and there was a child who got left behind on the bus. He definitely knew the word 'bus', but he did not know how to deal with the situation of taking one on a school trip. The child did not dare to ask someone on the bus for help."(P9) "The mother had not told him: "if something happens you can say...and he had no experiences with traveling by bus.""(P10)

Participation in activities provides a child with experiences that contribute to interest in and knowledge about his world. He can use this knowledge as a topic for conversations and will recognise others' information. A child's knowledge can positively influence aligning with communication partners during conversations and enhance CP(P17).

"If you have experienced a lot ...Children who venture out a lot with their parents have a better outlook on the world. They recognise things, and they can join in on conversations. I think that children with good knowledge of the world are less likely to get overwhelmed." (P17)

Theme 3: Isolation

Many participants expressed their concerns regarding children's opportunities for CP in daily life. They argued that children with DLD might be isolated due to their inability to use or comprehend language. These language difficulties can, for example, affect playing with peers because children do not understand each other, thereby impeding relationships and communication with peers(P20,P17).

"Children with DLD find it difficult to express ideas and language is often misunderstood by them. The child responds to a word but has not correctly interpreted the message. Peers, for instance, will not ask him for an explanation. They exclude the child with DLD from playing with them because they cannot cope with his communicative behaviour."(P20)

"The child becomes isolated from peers or for example, classmates due to insufficient engagement in conversations with them. He might be lonely or play with younger children."(P17)

Participants also suggested that the perceived 'abnormality' of children with DLD, by the children themselves and the environment, could lead to children's isolation. The perception of being different might influence whether and how children with DLD communicate(P9,P11).

"If a child is not like the other children in a group, due to a difference in verbal skills, the child might easily be excluded from the group."(P9)

"When your classmates are on the same level, it could make it a little easier to try or say something. As opposed to when you are always the one who does not understand or the one who gives strange answers because you did not understand the question. When you are the only different one, you will likely keep your mouth shut quicker. You will either become this loud, shouting child that is trying to be popular or this quiet, withdrawn, unhappy child."
(P11)

Theme 4: Behaviour of others

Participants mentioned that children's communicative behaviour may be challenging to interpret or does not match others' expectations, causing people to behave unsupportive towards children, this can negatively affect their CP(P22,P6).

"I think that the communicative behaviour of children with DLD elicits negative reactions from people in the environment. Children's way of communicating may be interpreted as behavioural problems by others. People in the environment might perceive that the child does not listen, which can be interpreted like the child behaves as he pleases instead of the child not being able to understand the message."(P22)

"Even when a child has supportive parents who understand their child's needs and abilities then eventually he will encounter others like his neighbours, a teacher or other children who might have different expectations of the child. Not everyone has a supportive attitude towards them, which can negatively affect a child's CP. It is great when parents can support their child, but besides that, the child may have problems with others. Parents are one thing, but besides them, there is a whole world to gain, I think."(P6)

Theme 5: Knowledge about children's abilities and needs

Participants agreed that knowledge about DLD regarding children's abilities and their need for support, in the children's social environment, could enhance their CP. Teachers' knowledge about and awareness of ways to support children is just one illustration about how to enhance children's CP(P4). Participants also argued that informing children about DLD is essential to provide insight into their role while communicating(P14).

"Make sure that the teacher has enough knowledge to understand what DLD means. Knowing how the child functions best and knowing the best way to ask him questions might stimulate the child to tell his story. The teacher has to know a lot more about the background and family of a child with DLD compared to other children who can explain themselves clearly, such as the name of a pet, to understand and support a child with DLD while communicating." (P4)

"Provide a child with insight into its role in communication. Sometimes there is a misunderstanding in the communication, but children do not realise it is because of something they have said."(P14)

Theme 6: Child's characteristics

The previous themes reflected the participants' beliefs about the impact of environmental factors on children's CP, whereas this theme is specific to children with DLD themselves because it concerns the discussions the participants had about the impact of personal factors on CP. In addition to the specific linguistic difficulties of children, participants discussed the following four characteristics: the children's self-perception as a communicator, their character traits, their cognitive functioning, and their approach to learning.

Child's self-perception as a communicator

Participants discussed the role of the children's perception as a communicator. They described that children with a 'negative' self-perception as a communicator might be characterised by performance anxiety, low self-esteem, or perfectionism(P18,P17).

"They freeze when they are addressed directly ... I think the experiences they have had in everyday communication, and the reactions to their way of expressing themselves, the poor sentences or not being understood. I think that is what makes them afraid to fail and results in low self-esteem."(P18)

"These children are often perfectionists. They perceive their communicative functioning in daily communicative situations as negative. They do not meet their expectations, nor the expectations of the people in the immediate environment."(P17)

According to the participants, children's communicative functioning in daily life can be illustrated by avoiding communication and limited verbal initiative(P16,P17).

"DLD is a vicious circle... if you have good verbal skills, and you have many things that come to mind if you were able to ask questions when you were little, or you can verbalise things, and other people respond to it... In children with DLD, those communicative patterns will develop very differently. If you do not know what to say or how to say it, of course, you will keep your mouth shut, and the other will not respond to you and...that is the idea."(P16)

"Sometimes, children have few conversations with people in the immediate environment. They often prefer to talk to adults rather than to their peers."(P17)

Participants also provided accounts of children with a 'positive self-perception' as a communicator, showing self-confidence and mental resilience(P17). Initiating contact, asking questions, and repeating expressions demonstrated their CP(P6).

"Some children are born with more self-confidence, and they have a different way of coping with failure. Some children feel secure more easily than others. I think that has to do with character as well, whether you have an open or more closed personality, for example. It also has to do with the underlying cause, like what does it do to your self-confidence, how do you deal with disappointment and how resilient you are."(P17)

"The verbal communication was not always a success, so you could say her communicative functioning was not great since she had to communicate using her hands and feet ... It was not always successful. Yet, I do feel like she was able to function quite well in communicative situations because she dared to start a conversation, to ask questions, and to repeat everything. She never said: 'never mind'. She just repeated it." (P6)

Child's character traits

Participants mentioned that character traits such as drive, curiosity, and perseverance may positively affect CP; the drive to communicate might depend on the need for social contact and communication, as well as pleasure in communicating(P17). Children with these traits are believed to converse, reformulate when not being understood, or ask questions to maintain conversations(P9,P11).

"I think children who are driven to communicate are eager to do something with others and enjoy communicating. All children should experience that communicating is fun."(P17)

"These children with a clear drive to communicate are eager to keep trying to be understood, even when you tell them you do not understand them and ask for repetition." (P9)

"I find curiosity to be a factor that has much influence on communicative participation if you do not understand someone, but you want to, or you are interested in what the other person means. Curious children will try to understand the other person. They will ask questions, that will keep the conversation going." (P11)

Participants identified shyness, aloofness, and passivity as attributes that can negatively influence CP. They stated that children with these traits might be quiet and require a safe environment to become involved in conversations(P18).

"I treat three-year-old twins, a boy who always works hard consistently, and his sister, who is shy and self-consciously stares at me. She follows what I do, looks at my mouth, but does not talk until she comes home ... The boy, on the other hand, keeps talking, and when he says a word that does not seem to make any sense, I can see him trying to find a better word. He has this drive, like: I have to get this clear." (P18)

Child's cognitive functioning

Participants considered limitations in cognitive functioning such as lacking inner-speech, or problems with auditory processing speed, an obstacle to CP. Inadequately initiating conversations, reacting too slowly during conversations, or imitating others instead of expressing one's own opinion illustrate children's problems with CP(P15,P17).

"I conceptualise it as a lack of an inner voice, necessary to guide effective, appropriate communicative behaviour. These children copy what others are doing a lot. The children do not know how to express themselves or how to react, so they look towards others to figure it out. As a result, these children do not sufficiently verbalise their own opinions or needs."(P15)

"What we may not take into account enough, is the fact that auditory processing is usually slower. When we communicate with children with DLD, we are just moving too fast. We do not give children time to think. So then, when the conversation has moved away from a certain topic, they will suddenly comment on that topic." (P17)

Child's approach to learning

Participants mentioned that the need to be explicitly taught communication skills, and to practise these skills in various contexts, characterises children's approaches to learning(P15). They argued that education or interventions in line with children's approach to learning will prepare children for communicative situations and might facilitate CP(P16).

"In our classes, we have noticed that children with DLD often are not able to start playing without guidance. What they do is often lacking fantasy. You will have to help them make a plan. When the theme in the class is the farm, I will help the child think about what kind of play is possible? What kind of games can you think of, what kind of role play goes with that? What do you say to each other? First, you have to show them what they could do, then you have to practice it with them, practice it again, and then they can do it themselves." (P15)

"The more you have prepared ...in different situations,...also during therapy or lessons at school, the sooner and easier a child can join in when it matters like outside or at school. When you have thought and spoken about something before, it is much easier for the child to join in. It also will give the child confidence. So preparation is essential...Maybe they do not automatically learn things by themselves."(P16)

Theme 7: CP as a dynamic development process

The above described environmental and personal factors that can affect CP are considered interrelated by the participants. They recognised that separating the factors can be difficult, but it is essential to understand children's development process accurately(P8,P6).

"I find it difficult to distinguish personal and environmental factors from one another. You are separating nature and nurture, right?"(P8)

"It is quite nice looking at all the factors like that. Why would one child participate perfectly well while the other, with the same language profile, experiences so many barriers. I think that dividing personal and environmental factors will help to analyse this developmental process better and to understand children's communicative functioning better." (P6)

CP was seen as the result of a dynamic development process where every factor matters. The following quote is one illustration of the dynamics between factors influencing CP(P16).

“Every factor is a factor, like, if you are from a troubled family but your parents are very competent at communicating, it can compensate for the problems in the family, if not it cannot. I once taught a boy who got placed into a foster family, and after that he improved so quickly. I figured this could not just be because of me; these foster parents were just a lot more competent communicators than his parents were.” (P16)

Discussion

This study's results suggest that in total, seven themes regarding CP in children with DLD may be important. As such, this study adds depth to existing knowledge by identifying factors influencing CP based on SLTs practical experiences, emphasising the role of personal factors. Five themes reflect the participants' beliefs regarding environmental factors influencing CP, one theme addresses the impact of personal factors on CP, and an overarching theme concerns participants' ideas about CP as a developmental process. The themes will successively be discussed.

The first theme, 'safety at home' emphasises safety, a situation without stress caused by real issues such as illness, as a fundamental condition for CP-development. It is consistent with a study suggesting that parental stress (e.g., housing) and family adversity (e.g., illness) negatively influences CP in children 8-12 years with DLD, and can affect parents' willingness to support their child.¹⁵

Theme two 'parenting skills', describes the influence of the parental communication style on children's CP. SLTs stressed the importance of parents who support their children during communication and offer them sufficient opportunities for conversation. In literature, the importance of parent-child conversations is also underlined, and associated with language development.³² However, it is reported that in general, parents of children with DLD converse less with their children, than parents with TD-children do.³³ As a result, children with DLD experience fewer meaningful daily conversations that could enhance CP than their TD-peers. Also, the theme illustrates the importance of facilitating engaging activities to practice verbal skills and acquire knowledge about the world. These findings correspond with literature suggesting that everyday activities are useful in offering young children opportunities to develop CP.³⁴

The third theme, 'isolation', reflects SLTs' concerns that children with DLD might become isolated from others due to their language problems or 'abnormality'. Consequently, this could reduce children's opportunities for CP. Previous studies also reported that speech and language difficulties can lead to isolation.^{14,35} A study that included children with speech sound disorders (SSD) found that both context and familiarity with children's difficulties can play a role in children's level of interaction and socialisation.¹⁴ At home children's difficulties were not an obstacle for communication, they felt included, while at school they may be isolated or may withdraw from interactions.¹⁴

The theme 'behaviour of others', illustrates that children's communicative behaviour might be difficult to interpret or does not match people's expectations, which may affect the amount of support children receive (e.g., time to converse) from communication partners. A study specifying these findings suggests that the invisibility of DLD might be responsible.³⁵ Literature emphasises the importance of a

supportive environment to stimulate CP.¹³ It reported that society and also the family itself do not always have a supportive attitude.¹³

Theme five 'knowledge about children's abilities and needs' highlights the value of educating the environment regarding children's abilities and needs. Environment's awareness may indirectly stimulate supportive behaviour and enhance CP. These findings correspond with literature reporting that awareness by people is assumed as a driving force behind attitudes.¹ It is suggested that awareness about children's ability level and how to cope with it, enables a positive attitude toward them, consequently facilitating supportive behaviour.^{18,35}

The theme 'child characteristics', comprises four subthemes. Firstly, 'Self-perception, as a communicator' reflects SLTs' beliefs about children's positive or negative self-perception as a communicator, affecting CP. A previous study provided an insight into the experiences of children with SSD; it suggested that children's self-perception depends on the context and others' reactions to their communicative behaviour.¹⁴ At home children felt accepted and positive perceptions were reported while in public they experienced frustrations, were misunderstood, and had low self-confidence as a communicator.¹⁴ Secondly, 'child's character traits', describes that character traits might influence CP. SLTs mentioned that traits, such as curiosity or shyness, can affect how children use their language skills in communicative situations and thus may facilitate or impede communication. Literature suggests that character traits might also affect communication partners because traits may invite opportunities for communication or make communication more challenging for them.¹⁶ Thirdly, 'child's cognitive functioning', suggests that limitations in cognitive functioning can be an obstacle to CP through influencing communication effectiveness (e.g., reacting too late), according to SLTs. Finally, 'child's approach to learning' reflects how children acquire verbal skills essential for CP and CP-development. Literature suggests that a child's 'personal resources'; cognitive functioning and the approach to learning, can be limiting or helpful (e.g., learning easily) for CP-development.¹⁶

Theme seven 'CP as a dynamic development process' highlights that contextual (personal and environmental) factors may interact and affect CP-development. Literature also described CP as a developmental trajectory.¹¹ It reported that children could make meaningful changes in CP-development regardless of communication function level.¹¹ This information suggests that barriers to children's CP were reduced. Contextual factors might have played a role in this. Therefore, identifying all contextual factors that can affect CP is important.

Strengths and limitations.

There are some limitations to the design and execution of this study. First, the role of the researcher might have influenced the results. Researchers' bias may have affected the study findings because the first researcher, who led the FGs, is a practicing SLT herself and had an influence on the discussion she led. However, she was reflexive of her role, the discussions were carried out with limited interrupting, and she used reflective memos to outline her assumptions about the subject. In addition, the researcher was known to some participants. There were also mutual relationships between some participants, which might have reduced the amount of perspectives. Finally, the researcher was inexperienced in conducting FGs, but a

second researcher assisted and asked follow-up questions. However, prior training and testing the questions could have possibly led to better guidance of the discussions.

Secondly, during data analysis, it was impossible to determine whether SLTs' beliefs about factors affecting CP were unique to children with DLD or could also be characteristic of TD-children. By using a control group of participants representing TD-children of the same age but without DLD, it might be possible to compare the results of both groups. Comparison of the results would help to distinguish whether the themes identified here are unique to children with DLD or generic to all children; this however was not part of the study design.

Finally, data saturation may have been achieved in this sample with SLTs, given the significant amount of repetition and consensus of themes across the groups, but the study results do not represent data saturation regarding the research question. SLTs have experience with a wide range of children with DLD. Nevertheless, their experiences will differ considerably from those of parents and children themselves. Therefore, including parents or children in the study could have led to richer data, but within the time available for this study, that was impossible.

This study also has several strengths. To my best knowledge, this is the first study describing the beliefs of Dutch SLTs concerning contextual factors influencing CP in children with DLD. Also, SLTs from different settings were included, thereby enhancing the credibility of the results. A transparent research process was pursued by performing a member check. Furthermore, data were partially coded by five researchers of the HU. The results were established after discussion with the researchers and consultation with the second supervisor.

Future research and implications for clinical practice

This small-scale study findings describe factors influencing CP through the lenses of practicing SLTs. Future research could first focus on exploring parents' views, or children's views where ethical, to provide a more accurate picture of contextual factors influencing CP.

Conclusions

Personal and environmental factors were identified, which, according to SLTs may interact and affect CP as well as CP-development. This experiential knowledge increases the understanding of CP and may guide SLTs in providing therapy to children. The results support the idea that assessments provided by SLTs should include not only a child's linguistic skills but also the personal and environmental factors related to CP as reflected in the themes. The themes represent a child's needs in various contexts and with different communication partners. Thus, contextual factors of concern can be identified to set personalised intervention goals aimed at improving CP.

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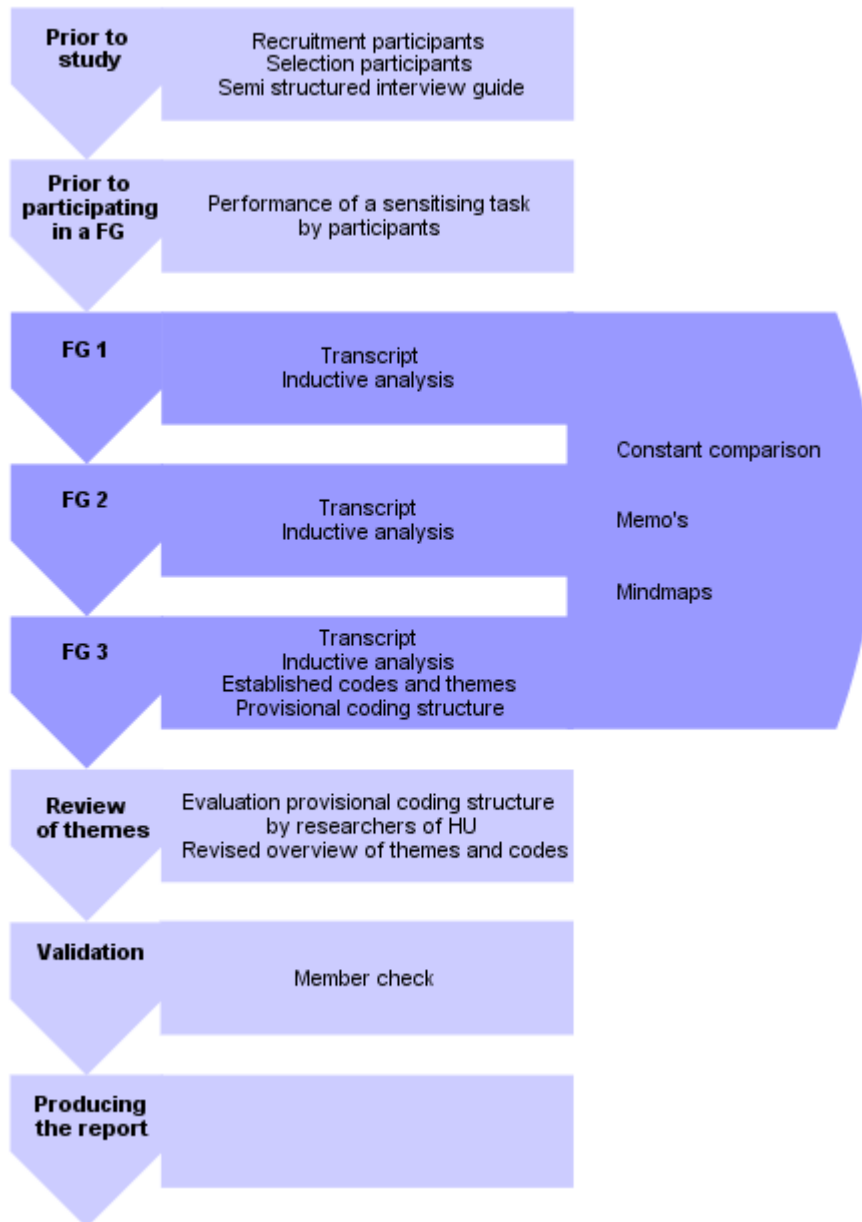


Figure 1. The flow chart, shows the procedures of the study design. FG = focus group

Table 1*Characteristics of the participants*

FG-number Participant number	Profession	Work experience (in years)	Work setting	The age range of the children	Work area
F1, P1	SLT Linguist	11	Audiological center	2;00-20;00	Rural Urban
F1, P2	SLT	20	SLT-practice	1;06-6;00	Urban
F1, P3	SLT	40	SLT-practice	1;06-16;00	Rural
F1, P4	SLT Lecturer	40	SLT-practice University AS	1;00-12;00	Rural Urban
F1, P5	SLT	20	SLT-practice	2;00-14;00	Urban
F1, P6	SLT Lecturer	25	Pre-school LI University AS	2;06-4;06	Urban
F1, P7	SLT Linguist	2	SLT-practice	2;00-10;00	Urban
F1, P8	SLT	32	SLT-practice	1;09-8;00	Urban
F2, P9	SLT	14	SLT-practice School LI	4;00-12;00	Urban
F2, P10	SLT Linguist	13	School LI	4;00-13;00	Urban
F2, P11	SLT	3	School LI	4;00-6;00	Urban
F2, P12	SLT	7	School LI	5;00-16;00	Urban
F2, P13	SLT	23	School LI	6;00-8;00	Urban
F3, P14	SLT	4	SLT-practice	3;00-16;00	Urban Rural
F3, P15	SLT	19	School LI	4;00-13;00	Rural
F3, P16	SLT	28	SLT-practice Schools SN	2;05-14;00	Urban
F3, P17	SLT	10	School LI	3;00-18;00	Rural Urban
F3, P18	SLT	20	SLT-practice School SN	3;08-11;00	Rural Urban
F3, P19	SLT	13	Schools SN	4;00-12;00	Rural Urban
F3, P20	SLT	27	School SN	4;00-12;00	Rural
F3, P21	SLT	25	SLT-practice	2;00-14;00	Rural Urban
F3, P22	SLT	3	SLT-practice	5;00-10;00	Urban

Note. FG = focus group F = focus group, P = participant, SLT = speech-language therapist, University AS = University of applied science, School LI = School for children with language impairment, School SN = School for children with special needs

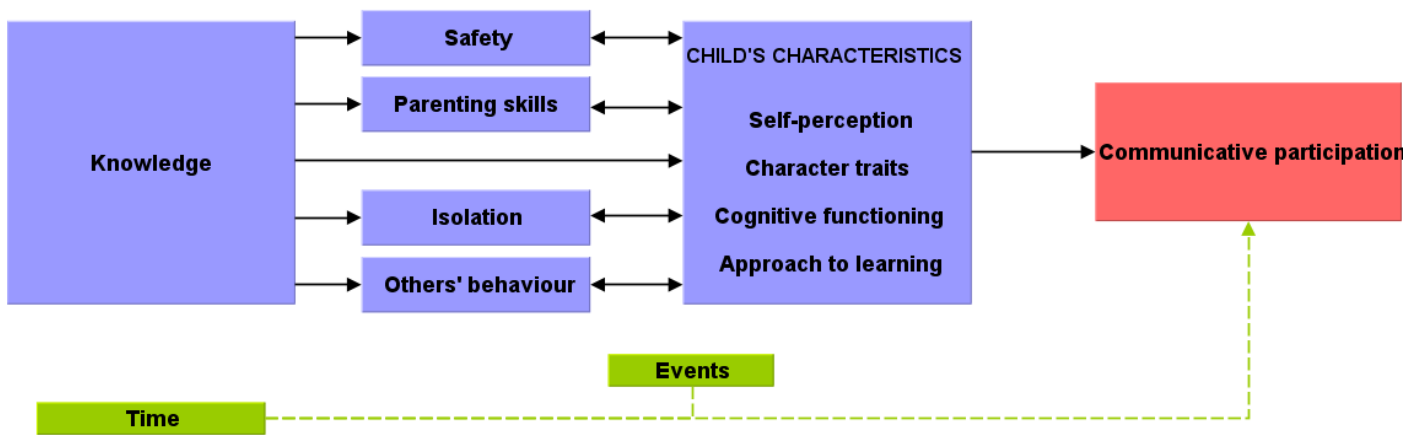




Figure 2: The model shows all identified personal and environmental factors that might interact and affect communicative participation and the development of communicative participation.

Appendix 1

Poster, part of the sensitising task. Participants were invited to use this poster to note personal and environmental factors that, in their opinion, might influence communicative participation for reference during the discussion

The influence of personal and environmental factors on communicative participation of children (age 3-8) with DLD.		 UMC Utrecht
! Personal factors !		
Positive	Negative	
! Environmental factors !		
Positive	Negative	

 Universitair Medisch Centrum Utrecht

Appendix 2

Summary of semi-structured interview guide

Primary questions	Examples of probes
Can we explain the difference in CP among children with the same language profile by the influence of personal or environmental factors?	Probe for examples and explanations. Can the difference in CP also be explained by inadequate measurement of language skills?
Which personal factors influence on CP of children with DLD?	Does the factor have a positive or negative influence on CP? Probe for examples and explanations. What kind of communicative behaviour does the child display? Does this behaviour differ from a child with typical development? Probe for examples and explanation Does everyone share this opinion or not? If not, what are these conflicting beliefs? Probe for examples and explanation. When does the factor influence CP? Does it relate to the child's age or environment? Which environmental factor can positively influence limiting personal factors to optimise CP?
Which environmental factors influence on CP of children with DLD?	Does the factor have a positive or negative influence on CP? Probe for examples and explanations. What kind of communicative behaviour does the child display? Does this behaviour differ from a child with typical development? Probe for examples and explanations. Does everyone share this opinion or not? If not, what are these conflicting beliefs? Probe for examples and explanation. When does the factor influence CP? Does it relate to the child's age? In case the environmental factor affects CP negatively, is there a possibility to manipulate that factor in order influence a child's CP positively?

Appendix: 3

Overview of all the themes, the subthemes, and codes

Themes	Sub-themes	Codes
Environmental factors		
Safety at home		No real problems such as financial issues, Predictability, Interest, Attention, Involvement, Time, No verbal compensation skills
Parenting skills	Communication style	Supportive parents: Sensitivity, Responsiveness, Giving confidence, Creating involvement, Child's empowerment Child's: Opportunities to communicate Take over parents: Talking for the child. Child's reduced opportunities to: Communicate, Practice verbal skills, Express needs, Express thoughts, Learn from failure Demanding parents: Asking questions, Focus on learning language and conversation skills. Child's reduced opportunities for: Verbal initiatives, Conversations with the parents
	Facilitating engaging activities	Child's: Observations of verbal role models, Opportunities to observe and experience the world: knowledge, Meaningful opportunities to practice verbal skills
Isolation		Isolation, Inclusion, Misconceptions due to language difficulties, Equivalence, Atypical, Being valued, Opportunities to socialise, Relationships with peers
Behaviour of others		Others' attitudes, Acceptance, Result driven, Supportive behaviour, Being understood, Interpreting communicative behaviour, Environments' expectations
Knowledge about children's the abilities and needs		Knowledge about a child's communicative abilities and needs for support. Others' awareness: abilities and needs of a child with DLD A child's awareness: effect of DLD on CP
Personal factors		
Child's characteristics	Self-perception as a communicator	Negative self-perception: Low self-esteem, Perfectionism, Frustration, Feeling inferior, Performance anxiety, Attribution style: remembering negative experiences, Coping style: avoidance Positive self-perception: Self-confidence, Mental resilience, Inclusion
	Character traits	Negatively affecting CP: Introversion, Shyness, Aloofness, Passivity, Own agenda Positively affecting CP: Curiosity, Extraversion, Perseverance, Being: Social, Happy, Brave, Drive: Enjoy communicating, Motivated, Go-getter, Goal-oriented
	Cognitive functioning	Executive functioning: Inner-speech, Inhibition, Theory of mind, Attention, Auditory processing speed, Sensory information processing Language skills, Bilingualism, Non-verbal communication
	Approach to learning	Explicit learning of communication skills: Role models, Scripts, Structured exercises, Strategies, Stimulating imitation Practicing skills: Repetition, Being prepared, Various contexts
	Barriers	Comorbidity: Theory of body, Autistic spectrum disorder, Attention deficit hyperactivity disorder
	Physiological needs	Eating, Drinking, Sleeping

CP, a dynamic development process		Personal and environmental factors: Influence CP, Interaction
Communicative participation	Initiating and responding in conversations	Initiation, negative: Still, Afraid to speak, Limited initiative, Inappropriate initiative, Others' initiative Initiation, positive: Asking questions, Initiating contact Response, negative: (In)appropriate answers, Little verbal response, Stop speaking, Imitation, Physical response Response, positive: Physical response, Repeat expressions
	Involvement: maintaining interactions	Negative: React to late, Imitate, Zoning out, Refuse to talk further, Reformulate at a minimum, Explain at a minimum, Interrupt conversations, Terminate conversations, Externalising behaviour Positive: Seeking alternatives, Reformulate, Using gestures, Repeat, Asking questions
	Communicative attitude	Positive, open to: Make contact, Start a conversation Negative: Avoidance, Clownish, Isolation, Withdraw
	Language skills	Positive: Understanding someone or being understood by the other, Ability to express oneself Negative: Not be heard, Not be understood, Do not understand the other, Conflicts, Minimal expressions

Note. DLD = Developmental language disorder, CP = Communicative participation

Appendix 4

A mindmap for each theme or subtheme showing the codes that might contribute to a child's CP

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