

Components and Characteristics on Communication Abilities of Autistic Children Parents Effectively

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Abstract

Parents play a crucial role in enhancing communication abilities in children with autism. However, there was a lack of systematic exploration of parent-child communication abilities in this context, underscoring the need to address this research gap. This study aimed to identify effective components and characteristics of parent-child communication in autism. This study used qualitative methods, including expert interviews and literature analysis. The study revealed the following findings:

1. Effective parent-child communication abilities were composed of four components and twenty-seven characteristics, which include: a) Create a conducive communication environment (7 characteristics); b) Eliciting communication behaviors in children (10 characteristics); c) Understanding the communication messages expressed by the child (6 characteristics); and d) Assisting children in understanding communication (4 characteristics). 2. Experts unanimously validated the accuracy, feasibility, and practicality of these findings. The study's outcomes can inform the development of assessment systems and training programs tailored to enhance parent-child communication abilities in children with autism.

Keywords: Components and Characteristics; Communication Abilities; Autistic Children Parents

Introduction

The social communication difficulties experienced by children with Autism Spectrum Disorder (ASD) have emerged as a pressing issue requiring urgent attention. Effective intervention by parents is crucial in addressing these challenges. Parents' implementation of effective communication strategies not only fosters the active participation of autistic children but also facilitates the development of both non-verbal and verbal communication abilities (Ann. & Megan, 2013). Additionally, it aids in mitigating disruptive behaviors among these children (Pickles et al., 2016). However, in reality, many parents lack appropriate communication methods, exacerbating the difficulty of interacting with their children and hindering the improvement of their children's communication abilities (Yao & Liu, 2018).

While numerous studies have focused on enhancing communication strategies for children with autism, there is a relative dearth of systematic research on improving parent-child communication abilities within this context (James & Marjorie, 2022). Parents serve as vital partners in the growth of children with autism, and their communication attitudes, intentions, and methods significantly influence their children's social and emotional development. However, existing literature often lacks robust theoretical foundations and detailed procedural descriptions (Ann & Megan, 2013), leaving many parents reliant solely on practical knowledge without a deep understanding of communication strategy principles or the ability to adapt them to their children's specific needs and communication situations.

While some studies have mentioned strategies such as establishing fixed daily routines (Jiang et al., 2020), using simple and clear language and instructions (Pickles, et al., 2016), and employing non-verbal communication methods (Chen, 2018), the underlying principles and common characteristics of these strategies are often inadequately elaborated. Consequently, parents may struggle to implement these strategies flexibly in practice or develop targeted approaches tailored to their children's circumstances.

The rising prevalence of ASD in recent years has exacerbated the challenges faced by affected individuals and their families. To more accurately assess and enhance parent-child communication abilities for families affected by autism, there is an urgent need for a systematic exploration of the components and characteristics of these abilities.

This study aims to conduct an in-depth analysis of the core components and characteristics of effective parent-child communication abilities among parents of autistic children. By analyzing the fundamental principles underlying these abilities, a relationship diagram will be

established, offering comprehensive guidance and suggestions for parents facing unique challenges. Additionally, this research will inform the development of training plans and intervention strategies better aligned with parents' needs, fostering improved understanding and support for their children and promoting harmonious family relationships. Ultimately, this endeavor will lay a solid foundation for the growth and integration of autistic children into society.

Research Objectives

1. Investigate the components of parent-child communication abilities in children with autism spectrum disorder.
2. Study the characteristics of parent-child communication abilities in children with autism spectrum disorder within the framework of Components .

Literature Review

This section reviews prior research findings to highlight the significance of these abilities and analyzes their components and characteristics, offering theoretical support for research.

1. Communication ability holds significant importance in contemporary society, with varying definitions and connotations proposed by different researchers. For instance, some research suggests that communication ability involves an individual's proficiency in employing suitable methods to effectively communicate within specific contexts. This proficiency entails making judgments across various aspects, including grammatical accuracy, psychological appropriateness, social and cultural relevance, and practical feasibility (Hymes, 1972). From the perspective of information transmission, other researchers argue that communication ability refers to the communicator's capacity to deliver appropriate and effective communication information. Communicators with strong communication abilities can conceive, operate, and adjust the thoughts or ideas they wish to express. They can encode these ideas in appropriate ways, convey them accurately to the other party, and determine whether their communication intentions have been successfully conveyed (Lin, et al., 2020).

There are currently many studies on communication abilities. As far as the components and characteristics of communication ability are concerned, different researchers have given different views on the components and characteristics of communication ability. For example, based on the characteristics of doctor-patient communication, some researchers believe that medical students' communication ability includes three components: communication attitude,

communication content, and communication effect, as well as the corresponding 18 details (Liu, et al., 2022). Some research divides the communication ability of rural teachers into four components based on the differences in communication objects: the ability to communicate with students, the ability to communicate with colleagues, the ability to communicate with parents, and the ability to communicate with the community, as well as the corresponding 12 characteristics (Zhang & Duan, 2018). Based on the characteristics of business work, Jiao (2018) believes that Intercultural Business Communication abilities comprise three components: English linguistic competence, communication contextual awareness and cross-cultural business communication competence.

Since the essence of ability lies in the unique psychological characteristics of an individual, possessing a certain ability means that the individual can perform specific tasks "efficiently" and "fluently". In view of the diversity of communication environments, the activities that communicators need to complete in different contexts are different, and the required knowledge, quality, and ability systems also present completely different appearances. Therefore, in-depth analysis of different communication activities is required based on the unique characteristics of the communication objects to ensure the effectiveness and smoothness of communication (Jiao, 2018). Current researchers mainly construct the components and characteristics required for communication abilities in different activities through the following two approaches (Liu et al., 2022; Zhang & Duan, 2018; Jiao, 2018): 1) Qualitative research method. It mainly includes literature research method, interview method, behavioral event interview method and other methods to collect data related to communication ability. On this basis, combined with professional thinking and logical analysis, the components of communication ability are summarized. 2) Quantitative research method. Mainly using statistical analysis methods, the author collects the communication ability performance of relevant personnel during this activity, and uses exploratory factor analysis and confirmatory factor analysis to obtain the components of communication ability.

2. Parent-child communication comes from communication and is a special form of interpersonal communication (Duan, 2017). It refers to the communication that occurs between parents and children, that is, the process in which they exchange information, opinions, thoughts, perspectives, emotions, attitudes, etc., in order to achieve mutual understanding, solve problems, strengthen emotions, and cooperate (Wang., et al.,2009). This is a process in which parents and children influence and promote each other. Parents' interaction style and communication methods will affect the development of children's communication abilities. At the same time, children's interactive behavior and communication abilities will also affect their parents' interactive style and

communication methods (Dai & Sun, 2020). Therefore, the subject of parent-child communication ability should include both parties in this communication relationship, namely adults and children.

The concept of parent-child communication is frequently discussed and applied in the field of ordinary children's family education. Current research related to parent-child communication mainly focuses on four aspects. 1) Explore the current situation of parent-child communication from the perspectives of children's cognition, communication topics, content, methods, frequency, initiative, and satisfaction (Li & Xu, 2016), especially special groups such as left-behind children (Guo, 2023), families of ocean-going sailors (Yang, 2021), families of drug addicts (Tian, 2023), and other current situations of parent-child communication. 2) Explore the influencing factors of parent-child communication from the perspectives of family structure, family environment, parent gender, age and educational level (Lu & Feng, 2022). 3) Explore the impact of parent-child communication relationship, especially focusing on mental health (Holger et al., 2023), social adaptation (Peng & Dai, 2019), academic achievement (Yue, 2020) and other aspects. 4) Explore ways and strategies to improve parent-child communication relationships in different contexts, including promoting the importance of parent-child communication, changing parents' concepts of parent-child communication, improving communication language skills, seizing the opportunity to communicate, and choosing appropriate communication methods (Chen, 2017), and so on.

A few researchers have used different methods to explore the components and characteristics of parent-child communication ability from different perspectives. For example, Lippe used literature analysis and statistical analysis methods to divide parent-child communication ability into cognitive components and emotional components. The cognitive component mainly includes the ability to explain things, curiosity about things, focused discussion between the two parties, and the ability to solve problems; while the emotional component mainly includes the ability to accept things and the ability to actively understand things (Lippe & Moller, 2000). Chi (2011) used the method of literature analysis to study the theory of parent-child communication between primary school students and their parents. She divided parent-child communication ability into two dimensions: listening ability and expression ability. Among them, listening ability mainly refers to the openness and sensitivity of the communicator; expression ability includes the communicator's active and clear expression during the communication process and the strategic and skillful expression of certain topics.

In addition, some parent-child communication ability questionnaires or evaluation forms will involve different elements and details, which will also provide some inspiration for our study of

the components and characteristics of parent-child communication ability. For example, in Jiao's research, the main areas of assessment for the parent questionnaire include: open expression and communication, listening and responding, cross-examination and questioning, disagreement and conflict resolution, understandability and other components (Jiao, 2019). In the Dyadic Parent-Child Interaction Coding System, an assessment tool, Sheila and Elizabeth(2000) divided parents' parent-child communication abilities into components such as guidance, questions, instructions, and responses to children.

3. Although parent-child communication involves both parents and children. However, due to factors such as the communication characteristics, experience, and abilities of children with autism, they are often in a weaker position when communicating with adults, and often need to face persistent differences. Therefore, as adults who are in a stronger position in communication, they need to have some communication abilities, understand and use some skills and strategies, promote mutual understanding with children, promote the appropriate and effective transmission of communication information, and then enhance children's willingness to communicate. and ability (Xu et al., 2020). Therefore, the parent-child communication ability of parents of autistic children is mainly based on parents. In the process of communicating and interacting with children, they use verbal or non-verbal methods to exchange information, opinions, thoughts, perspectives, emotions, attitudes, etc. with their children. In order to achieve the purpose of understanding each other, solving problems, strengthening emotions, cooperation, and improving children's communication willingness and ability (Duan, 2017).

Current research on parent-child communication ability of parents of autistic children mainly focuses on two aspects. 1) Examining parental capabilities during parent-child interactions. By observing and comparing the differences in interactions between parents of children with autism and those of neurotypical children, researchers analyze the characteristics of parent-child interactions, such as higher levels of directive guidance and lower levels of supportive behaviors (James & Marjorie, 2022). 2) Providing guidance to parents of children with autism, teaching them communication strategies. Such studies include Parent-Child Interaction Therapy (PCIT), Parent-mediated communication-focused treatment (PACT), Relationship Development Intervention, Developmental, individual-difference relationship-based model (DIR), etc. (Green et al., 2010; Jiang et al., 2020; Liu & Feng, 2018; Wang & Mo, 2022; Yang et al., 2014). In these studies, many effective strategies for parents of children with autism to communicate with their children were mentioned. such as sensitivity to children's reactions, providing support during

communication, responding to children's communication behaviors, using specific language models, expanding, and reshaping children's communication behaviors, and taking turns in communication (Ann & Megan, 2013).

4. Currently, although there is abundant research on the components and characteristics of communication abilities, there is a relative lack of research focusing on parent-child communication abilities between parents and children with autism. From the perspective of the research and development history of communication ability and parent-child communication ability, in order to effectively improve the parent-child communication ability of parents of autistic children, we urgently need to conduct a comprehensive and systematic analysis and construction of its components and characteristics. This is not only the basis for accurately assessing their communication abilities, but also provides strong support for accurately strengthening their communication abilities. In the absence of direct relevant research, we can draw on existing methods for constructing communication abilities and parent-child communication abilities, such as literature analysis, in-depth interviews, and statistical analysis, to systematically construct the components and parent-child communication skills of parents of autistic children. feature. Through this research path, we hope to fill the research gap in this field and provide scientific basis and guidance for improving the quality of parent-child communication in families of children with autism.

Conceptual Framework

This research is a research study about Parent-Child Communication Abilities of Parents of Children with Autism. The details are as follows.

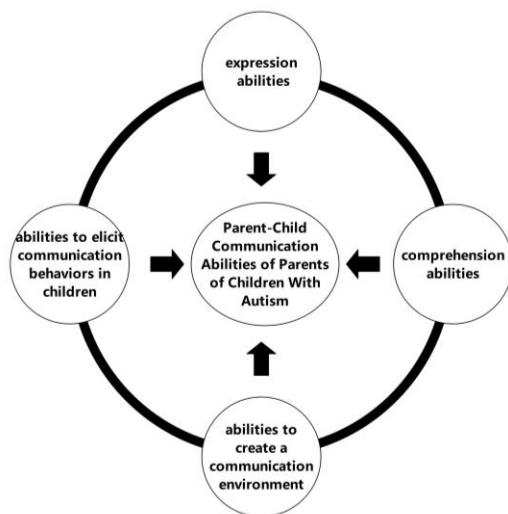


Fig.1 Conceptual Framework

Research Methodology

This is a descriptive qualitative study. The researchers obtained research information by three stages:1) analyzing literature,2) conducting interviews with experts,3). Experts review the components and characteristics. The research objects, research tools, data collection and analysis methods involved in different stages are different, which are introduced below.

1. Research object

The research object in the literature analysis stage is the relevant literature involved.

The researchers conducted literature searches in databases such as CNKI, Web of Science, and ERIC using Chinese search terms such as autism (spectrum disorder), autism, Asperger's, Asperger, pervasive developmental disorder + children + parents, and English search terms including ASD, autistic, autism, Asperger syndrome, Pervasive Developmental Disorder + children + parents (parent). To ensure the continuity and timeliness of the research, the search time limit was set from 2000 to the present. As of July 18, 2023, a total of 4,496 documents have been obtained. After screening out duplicate documents through the literature titles, 2506 documents were obtained. Based on the literature abstracts, relevant literature that did not involve parent-child communication abilities of parents of autistic children was filtered out, and 656 articles were finally selected to form the sample data of this study. Finally, those that did not mention specific intervention strategies and methods were deleted, interventions that were not parent-involved were deleted, and non-English and Chinese literature was deleted. 11 documents focusing on parent intervention for autistic children were obtained, and the strategies involved were coded and analyzed.

The research objects in the expert interview stage are experts in the rehabilitation education of autistic children.

Purposive sampling method was used to select 5 experts. All five interviewees have over 10 years of experience in ASD education and rehabilitation, as well as over 7 years of experience in counseling, guiding, and training parents of children with autism. They all hold managerial roles related to teaching in their respective institutions. Geographically, the interviewees are from Beijing, Shanghai, Guangzhou, Taiwan, and Chongqing. In terms of service institutions, they represent medical institutions, university rehabilitation centers, private organizations, and others. Regarding the professional background of the interviewees, some have a medical background and engage in traditional speech therapy, some focus on applying behavioral analysis methods for

child intervention, others emphasize the use of game therapy for child intervention, and some have experience with sand tray teaching.

The research objects in the Expert Review stage are experts in the rehabilitation education of autistic children and assessment specialist.

Purposive sampling method was used to select 5 experts. Among these experts, four specialize in the field of ASD rehabilitation, particularly around communication rehabilitation, boasting over 15 years of relevant experience. Additionally, each of them holds responsibilities in teaching and management within their respective institutions. The fifth expert is an assessment specialist familiar with counseling and training for both children and their parents.

2. Research tools

The research tool in the literature analysis stage is the coding list.

The coding list compiled by the researcher, consists of the researcher, intervention method, dimensions, and characteristics. It is used to analyze the competences and characteristics of parent-child communication ability of parents of autistic children.

The research tool in the expert interview stage is interview outline.

The interview outline compiled by the researcher. The main body of the interview outline consists of seven questions. One of the questions asked about experts' views on the components of parent-child communication abilities, the other four questions asked about the characteristics under these components respectively, and the remaining two questions collected experts' views on the components and components of good parent-child communication skills in an open-ended manner. Characteristic views.

The research tool in the expert review stage is Content Validity Checklist.

The Checklist compiled by the researcher. The purpose of it is to examine the content validity of the components and characteristics of parent-child communication abilities of parents of children with autism. The scoring method is -1, 0 and 1. If it is very inapplicable, record -1, if it is applicable after modification, record 0, and if it is very applicable, record 1.

3. Data collection and analysis

The data collection and analysis in the literature analysis stage.

The researchers and two research assistants employed strategies like merging, deleting, simplifying, and decomposing to code the collected information. Due to variations in terminology across different sources, such as "Balance turn taking" and "Balanced Turns". Options that researchers and research assistants disagreed on were resolved by referring to the original text.

The meaning was analyzed, and if the original text did not specify a particular meaning, additional resources were consulted or experts in the field of autism were contacted for clarification. Initially, objectives with higher frequency were selected, and the remaining objectives were then integrated and organized to derive the specific objectives of parent-child communication abilities in parents of autistic children.

The data collection and analysis in the expert interview stage.

Semi-structured interviews were conducted with five experts. Convert the interview results into verbatim transcripts, check it, and revise the text and grammatical errors. After that the experts reviewed the verbatim transcripts, the research team, along with two research assistants, utilized NVIVO for coding the transcripts. The interview data was organized based on the results of the literature analysis, and revisions and additions were made to the characteristics of parent-child communication abilities in children with autism spectrum disorder.

The researcher, along with research assistants, analyzed and discussed the elements and Characteristic, following the principles outlined below:1) For identical details, the details were directly selected, such as waiting, observing, accepting, imitating, and so on.2) For similar details, a reasonable and professionally understandable term was chosen.3) For different details, after everyone reread the specific content, a decision was made based on experience to retain or delete them. If a detail was rarely applied in teaching practice, it was deleted. For the retained details, a reasonable, professionally understandable, operationally feasible term that aligns with the original meaning of the detail was chosen. 4) For details that appeared in different elements, they were categorized into the most representative element based on frequency and discussion with the research assistant. 5) For some controversial details, a vote was conducted to decide whether to retain or discard them.

The data collection and analysis in the expert review stage.

Experts scored the components and characteristics of parent-child communication ability of parents with autism based on the content validity checklist, and the factors and characteristics will be revised based on the scoring results.

Research Results

The research results in the literature analysis stage.

Through literature analysis, the researchers preliminarily determined the components and characteristics of parent-child communication abilities of parents of autistic children. Among them,

the four components information transmission model involves factors that are constructed based on the communication characteristics of autistic children, as shown in the figure below.

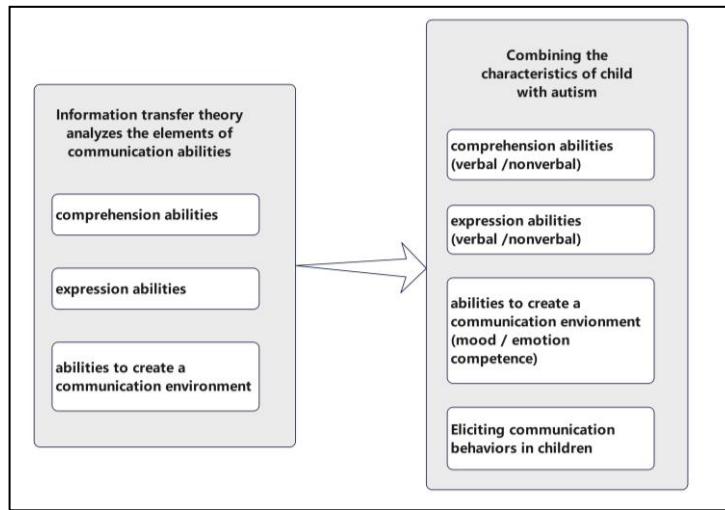


Fig 2. The Components of Effective Parent–Child Communication Abilities of Parents of Children with Autism.

According to the literature analysis, characteristics for parent–child communication abilities in parents of autistic children were identified. Initially, objectives with higher frequency were selected, and the remaining objectives were then integrated and organized to derive the specific objectives of parent–child communication abilities in parents of autistic children. The results of the literature analysis are presented in the table below.

Tab. 1 Components and characteristics of Parent–Child Communication abilities in Parents of Autistic Children.

Components	Characteristics
Constructing a good communication environment	Balancing rights in communication (5), accepting the child (5), self-acceptance (1), engaging in enjoyable play with the child during interactions (4), empathizing with the child's emotions and feelings (2), flexibility in adjustments (2), arranging communication environments (1).
Eliciting communication behaviors in children	Remaining sensitive to the child's communication behavior (8), responding to the child (15), imitating the child (5), following the child (5), enticing the child (2), pausing, and waiting (6), reinforcing the child's communication behavior (2), prompting (1), face-to-face eye contact (1).
Assist children in understanding communication messages	Adjusting adult communication style (3), using appropriate language (1), repetition (3), utilizing various forms of communication cues (9), structured activities (2), providing support (2), reducing cognitive load (1), clarifying abilities (1).
Understand the communication messages expressed by the child	Observing the child (3), interpreting the child's behavior and emotions (1), understanding the meaning conveyed by the child (1).
Other	Enhancing children's language expression abilities (2), eliciting children's language abilities (1), expanding children's language (3), demonstrating language (4), assisting children in expression (2).

Since the items in the "other" category mainly relate to enhancing children's language expression abilities, they can be collectively included in this dimension. Additionally, the specific objective of "enhancing children's language expression abilities" has been added. This encompasses utilizing demonstration, expansion, and other methods to improve children's language clarity, enrich their vocabulary, and optimize their grammar abilities, among other aspects.

The research results in the expert interview stage.

Experts believe that it is reasonable and feasible to analyze the parent–child communication ability of parents of autistic children from four components, which helps to integrate various characteristics.

“I think the parent-child communication ability of parents of autistic children does cover a lot of content, and it is necessary to give a clue to unify it. Different researchers may have different ideas, and it is possible to analyze these characteristics from the perspective of information transmission.”

(Interviewee 1)

“These four components not only consider the path of information transmission and reception, but also consider the characteristics of autistic children in terms of communication ability. I think it is feasible.”

(Interviewee 4)

Based on recognizing these four components, it is necessary to adjust some details.

“The components of parental expressiveness can emphasize its main purpose, which is to help children understand. This can remind parents not only to express themselves, but also to consider whether their children understand what they express.”

(Interviewee 3)

“Some parents rarely consider children's attention and understanding when expressing, or whether children accept and understand the information. This ability can be made clearer”.

(Interviewee 2)

The interview results were coded, and a total of 35 characteristics were coded under four components. Due to space constraints, we do not present them one by one, only the coding of constructing a good communication environment is presented.

Tab. 2 Characteristic of constructing a good communication environment.

Characteristic	Examples
Providing a Safe Environment	<i>"Safety is very important. This safety is not only safety in the physical sense, but also safety in the psychological sense. Let the children know that they will be tolerated and accepted in this communication relationship, instead of being corrected and denied all the time."</i> (Interviewee 4)
Following child	<i>"I would advise parents to prefer a child-led approach, with him taking charge of the entire activity and the communication methods used therein, and then the adult following the child."</i> (Interviewee 1)
Interacting with the Child	<i>"There should be a back-and-forth interaction with children, not just adults controlling the communication process."</i> (Interviewee 3)
Accepting the Child	<i>"It's just that his conflict lies in whether he can accept his behavior."</i> (Interviewee1)
Reducing Environmental Distractions	<i>"Some children have poor concentration ability. If there are many distractions in the environment, it may affect their communication abilities. Parents should reduce some distractions in the environment."</i> (Interviewee2)
Without Purpose	<i>"In play therapy, we place a special emphasis on playing with children without purpose. This strategy is particularly important for developing social communication abilities in children with autism. I would emphasize this to parents."</i> (Interviewee 5)
Equality	<i>"You just roll around on the ground, and he thinks you're a bit funny, and he might even look at you. Let go of your adult posture, yes, and become like a child, that's it, In fact, it is a key word called equality, this equality in attitude and mentality. I really rolled on the ground."</i> (Interviewee 4)
Empathizing with the Child	<i>"There are differences in the sensory perception and cognitive abilities of autistic children from ordinary children. Their inappropriate communication methods, emotions and other problems may be affected by these differences. As parents, we should not only see the problems of our children, but also understand the causes of these problems to better understand them"</i> (Interviewee 2)
Joyful	<i>"Of course, parents should have fun playing with their children. This is the prerequisite for them to establish a good communication relationship."</i> (Interviewee 3)
Sincere	<i>"Parents should be sincere when communicating with their children. Children will feel whether you are really responding to them and praising them".</i> (Interviewee 2)

The results of literature research and expert interviews were analyzed and integrated, and the following results were obtained.

Tab. 3 Results of components and characteristic in Parent-Child Communication Abilities in Children with Autism.

Components	Characteristic
Constructing a good communication environment	Acceptance; Equality; Playfully engaging with children; Empathizing with children's emotions and feelings; Flexibility in adjustments; Arranging a suitable physical environment for communication.
Eliciting communication behaviors in children	Responding, observing, reinforcing children's communication behaviors, pausing, and waiting, imitating, following, and joining, interest induction (expanding), prompting, exaggerating to amplify communication cues, breaking routines, intentionally playing dumb, persistent pursuit.
Assist children in understanding communication messages	Utilizing various forms and degrees of communication cues, adjusting adult communication style (lowering language difficulty, using language suitable for children, repeating), structured activities, providing support, reducing cognitive load,
Understand the communication messages expressed by the child	Observing, speculating about children's expressions, staying curious, and listening. Enhancing children's language comprehension and expression abilities, including eliciting children's language abilities, expanding, demonstrating, and assisting children in expression.

The research results in the expert review stage.

Anonymous experts rated the components and features, with CVI scores ranging from 0.8 to 1. All five experts consider components and characteristic them as valid and applicable.

Discussions

The method of constructing the components and characteristics demonstrates appropriateness.

Given the limited research on the concept of parent-child communication abilities in parents of children with ASD in China, a systematic review and in-depth exploration of its components and characteristics were conducted. Considering the extensive and dispersed nature of information in this field, the framework theory was adopted as an effective tool for integrating and analyzing this information. Originating from Erving Goffman's insights, the framework theory

posits that frames are valuable tools for understanding and organizing experiences, making different action segments in social interactions orderly and systematic, thereby extracting genuinely meaningful content from a wealth of information (Yang et al., 2023).

The framework theory not only assists in organizing and refining information but also highlights the core definitions of things, elucidates their inherent relationships, and reveals problem-solving strategies (Li. et al., 2021). Through this theoretical perspective, we can comprehensively reveal the multidimensional features and attributes of parent-child communication abilities in children with ASD. As a cognitive tool for deeply understanding human social behavioral activities and an explanatory framework, the framework theory provides us with a research path from social existence to subjective cognition, particularly in research methods such as in-depth interviews, where its application is extensive (Wang, 2020).

Because the information transmission theory, developed based on Shannon's information theory, can comprehensively explain the components involved in interpersonal communication processes (Mirko & Nelly, 2021), it was chosen as the framework for studying the components involved in parent-child communication abilities in parents of children with ASD. Considering the characteristics of communication between parents and children with ASD, the components were specifically described and refined, ensuring a comprehensive and accurate depiction of the components involved in parent-child communication abilities. Building upon the determination of the components, the framework theory was further utilized to collect, summarize, and organize information related to the characteristics of parent-child communication abilities, integrating them into the framework of the four components.

The information gathered to construct the Components and characteristics of communication abilities is reliable.

For a relatively new research field, comprehensive and accurate literature reviews are essential to ensure its scientific rigor and completeness (Zhang, 2022). Although the concept of parent-child communication abilities in children with ASD is widely recognized, there are few studies that comprehensively and thoroughly discuss the Components and characteristics involved in this ability. This study collected literature related to parent-child communication abilities in children with autism spectrum disorder from two aspects. On one hand, the literature explicitly proposes training programs aimed at enhancing parental communication abilities to improve communication abilities in children with autism spectrum disorder. On the other hand, while some literature does not explicitly mention enhancing parental communication abilities, it still pertains to

promoting communication abilities in children with autism spectrum disorder, from which information related to parent-child communication abilities was extracted. This includes behavioral training programs, developmental training programs, and those that integrate both, covering the information needed to promote social communication abilities in children with autism spectrum disorder in current research and practice.

For a relatively new research field, it is crucial to ensure its rationality and applicability, and information provided by experts with solid theoretical foundations and rich practical experience in relevant fields is also essential. They can help clarify and confirm some potentially controversial issues (Zhang, 2022). In the process of constructing the system related to the components and characteristics of parent-child communication abilities in children with autism spectrum disorder, experts first identified the four major components and refined and reorganized them. Then, under the framework of these four components, they elaborated and explained the characteristics involved in each component in detail based on their own experiences, resulting in a comprehensive and rich collection of information.

Knowledge from Research

The researcher has defined a conceptual framework based on Shannon's information transmission theory in conjunction with the characteristics of children with autism. Through methods involving literature analysis and expert interviews, four constituent components and 27 characteristics.

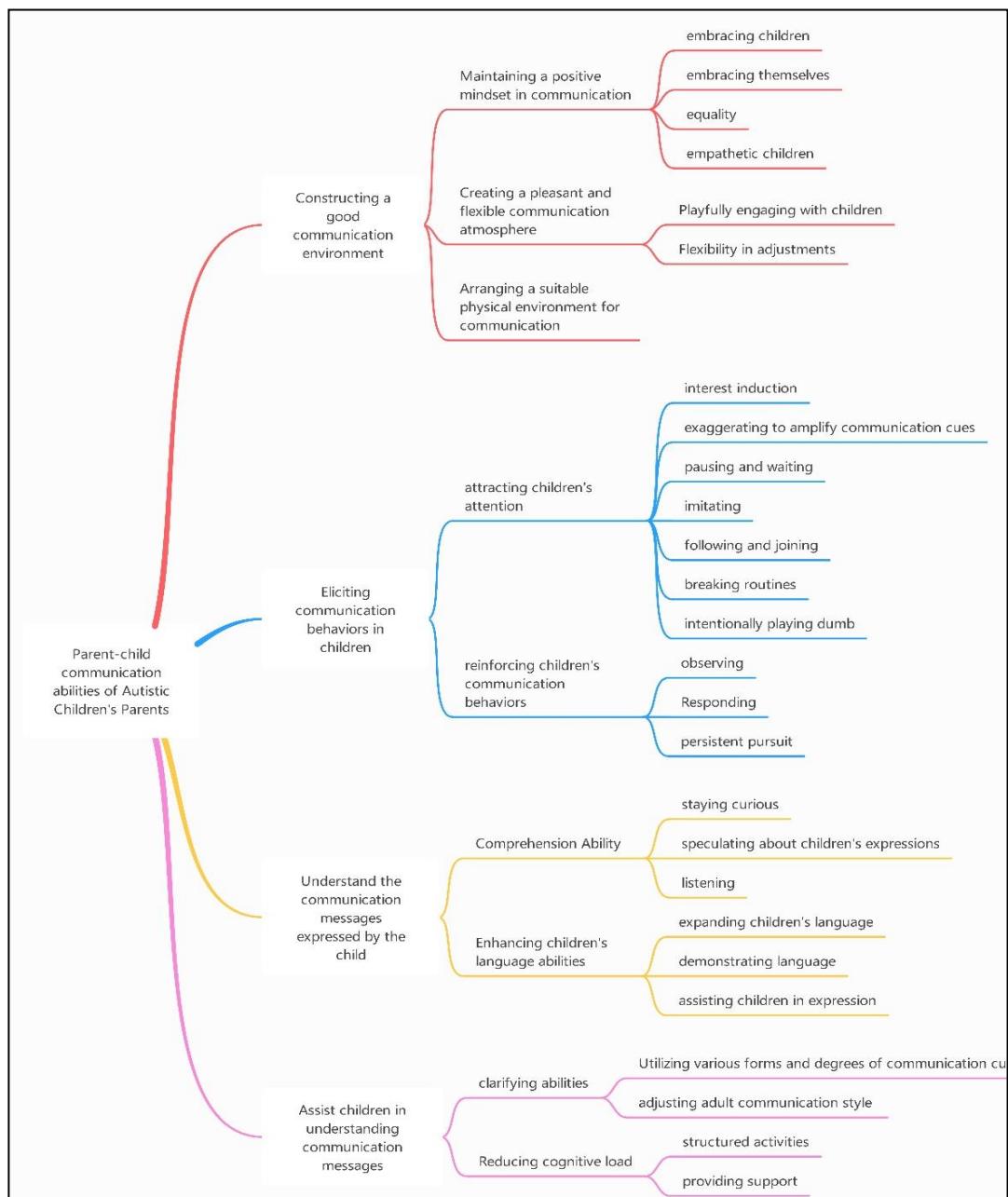


Fig.3 The Elements and Characteristics of Effective Parent–Child Communication Abilities of Autistic Children's Parents.

Conclusion

The effective parent–child communication abilities in children with autism comprise four key Components and 27 Characteristics:

- 1) constructing a good communication environment, composed of 7 characteristics.
- 2) Eliciting communication behaviors in children, composed of 10 characteristics.

- 3) Understand the communication messages expressed by the child composed of 6 characteristics.
- 4) Assist children in understanding communication, composed of 4 characteristics.

Suggestions

1. Recommendations for Future Application of Research Findings:

1) Based on the components and Characteristics of Effective Parent-Child Communication Abilities of Parents of Children with Autism, it is suggested to develop an assessment tool named the Parent-Child Communication Abilities of Parents Assessment Form. This tool can aid personnel in autism education and rehabilitation institutions, parent training organizations, as well as parents of children with autism in understanding their parent-child communication abilities. Subsequently, targeted assistance can be provided based on the assessment results.

2) Considering the comprehensive and systematic nature of the components and characteristics of effective Parent-Child Communication Abilities of Parents of Children with Autism, it is proposed to design parent training courses or programs accordingly. Such initiatives aim to assist parents of children with autism in enhancing their parent-child communication abilities.

2. Suggestions for Future Research:

1) This study solely conducted expert review and assessment of the components and Characteristics of Effective Parent-Child Communication Abilities of Parents of Children with Autism. Future researchers can utilize this as a foundation to develop questionnaires and conduct statistical analyses of the reliability and validity of the questionnaire results.

2) While this study primarily focuses on the parent-child communication abilities of parents of children with autism, it is recommended that future research explore the communication abilities' components and characteristics of other significant individuals involved in the lives of children with autism. These individuals may include special education teachers, autism rehabilitation instructors, mainstream education teachers, as well as peers of children with autism.

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