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Pragmatic Language Difficulties in Children with Specific Language Impairment – A Systematic Review

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Abstract

Specific Language Impairment (SLI) is a developmental disorder wherein a child fails to acquire age-appropriate linguistic skills. The study attempted a systematic review of articles pertaining to pragmatics in children with SLI in the last decade. A thorough search of the electronic databases yielded 666 articles, out of which 136 articles were shortlisted. Among these, 14 articles were selected for full length screening based on predetermined criteria. The use of PICOS design for filtering the articles led to the selection of 2 articles. The results of the review revealed a dearth of studies in this area. The two selected articles explored the pragmatic components in the SLI group in depth as against the typically developing peers. The studies highlighted the way in which children with SLI react to pragmatically demanding situations by demonstrating deficits with turn taking, maintaining a topic, unusual content and use of language and difficulties with comprehending context. Also attempts have been made to illustrate the pragmatic patterns within the SLI group to identify children who exhibited disproportionate deficits in pragmatic language versus those who had no pragmatic difficulties. The comprehensive review draws attention to the need for speech-language pathologists to distinguish pragmatic deficits from generalized linguistic deficits in children with SLI. The study also underlines the importance of identifying subgroups of children with SLI.

Keywords Specific Language Impairment, pragmatics, linguistic deficits, systematic review, communication disorder, pragmatic deficits

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1. Introduction

Communication is one of the functions of language wherein the speaker attempts to convey the meaning behind his/her communicative intent. Spoken language is one of the widest means of communication adapted by humans and innumerable linguistic variations have been made across centuries. Pragmatics in the area of linguistic and communication sciences refers to the usage of contextual meaning in various conversational circumstances. It focuses on areas such as the use of language in social interaction, aspects of meaning not recoverable from linguistic expressions and connected discourse (Leinonen, Letts & Smith, 2000). Pragmatics deals with the process used by the speaker to cognize the intentions while dealing with various situations before expressing the thoughts. The listener then analyzes the intended meaning, investigates their purposes and explores the assumptions of actions with respect to the performance in front of the audience (Siddiqui, 2018). A recent study by Cordier, Munro, Wilkes-Gillan et al. (2014) has described several observable communication behaviors associated with pragmatic language and these behaviors have been classified under five sections including Introduction and responsiveness, Non-verbal communication, Socio-emotional attunement, Executive function and Negotiation.

Language disorders in children are one of the most frequent causes of difficulties in communication, social interaction, learning and academic achievement. One of the prominent language disorders seen in the pediatric population is Specific Language Impairment (SLI). SLI is understood to be a disruption in language acquisition wherein a child does not acquire age-appropriate linguistic skills in spite of having normal hearing abilities and non-verbal intelligence and no associated sensory or neurological impairment (Leonard, 2014; Joanisse & Seidenberg, 1998). The primary sign of SLI is a delay in the acquisition of words or expressive language followed by a subsequent delay in the acquirement of syntax (Rescorla & Lee, 2000). A more recent term proposed is the 'Developmental Language Disorder' (DLD), which will be used by the upcoming International Classification of Diseases-11 (ICD-11) classification in 2022 (Bishop, 2017). The enforcement of this term DLD is the result of years of international work led by Bishop and her colleagues who have championed the development and use of this term (Bishop, 2014; Bishop, Snowling, Thompson & Greenhalgh, 2017). This term includes all the diagnostic criteria of SLI, but excludes using non-verbal ability as a diagnostic criterion, thereby allowing reflection of clinical realities.

Across the last few decades, various studies have focused on investigating the linguistic deficits and patterns in children with SLI. Earlier studies conducted on native speakers of English highlighted that grammatical morphology was the primary deficit for children with SLI, but gradually over the years, light has been thrown on semantic, pragmatic and cognitive-linguistic discrepancies (Bishop & Donlan, 2010; Osman, Shohdi & Aziz, 2011; Tsimpli, Peristeri & Andreou, 2016).

With advancement in research, it was noticed that children with SLI had issues with pragmatic development which could be exhibited as problems with interactive communication. Some of the initial attempts at investigating

the problems with respect to social interaction in this population were begun in the 1980s, wherein pragmatic features such as turn exchange behaviors and conversational management were compared with typically developing (TD) children (Fey & Leonard, 1983; Craig & Evans, 1989). The studies revealed that most children with SLI exhibited discourse regulation deficits with respect to interactive attention, degree and latency of responsiveness and length of turn-taking.

In the following decade, detailed analyses were carried out examining the intricate relationship between semantic and pragmatic development in SLI, which led to the conception of the term 'semantic-pragmatic disorder' (Adams & Bishop, 1989). Theoretical linguistic models were applied to categorize the semantic and pragmatic behaviors, which led to highlighting deficits such as failure to understand literal meanings, volunteering too little information, usage of avoidance strategies and lexical simplification (Mills, Pulles & Witten, 1992). Craig and Evans (1993) further explored the pragmatic abilities by subdividing the SLI groups based on their language as expressive SLI (E-SLI) and combined expressive-receptive SLI (E-R-SLI) and revealed that the two groups differed on pragmatic skills such as turn-taking and cohesion.

During this decade i.e., 1990's, there was an attempt to delineate the various terminologies such as 'pragmatic disability' (McTear & Conti-Ramsden, 1992), 'semantic-pragmatic difficulties' (Vance & Wells, 1994), and the more widely investigated term, viz. 'pragmatic language impairment' (PLI) (Bishop, 1998). There has been a great deal of controversy regarding PLI and the debate has centered over the question of whether it is a subtype of SLI or a part of the autistic spectrum, or a separate condition. Various authors have tried to differentiate between SLI and PLI (Botting & Conti-Ramsden, 1999; Bishop, 2000). The clinical criteria for PLI enumerates that although the child speaks in fluent utterances with adequate articulation, he/she may be poor at turn-taking in conversation and have difficulties following rules for conversation.

At the turn of the 21st century, there was a noteworthy escalation in studies investigating the pragmatic component of language in SLI. Researchers drew the focus to various interrelated aspects of language and behaviors such as social cognition, social self-esteem, behavioral discrepancies among others (Conti-Ramsden & Botting, 2004; Marton, Abramoff & Rosenzweig, 2005). The pragmatic difficulties observed in children with developmental language disorders such as SLI was profiled and the role of PLI was also compared with disorders which occur as part of the behavioral phenotype of organic syndromes such as Autism Spectrum Disorders (ASD) and Attention Deficit Hyperactivity Disorder (ADHD) (Bishop, Chan, Adams, Hartley & Weir, 2000; Reisinger, Cornish & Fombonne, 2011). It was concluded that a sub-group of children with SLI could exist, who demonstrate primary pragmatic deficits and it is therefore essential to identify children with PLI from the heterogeneous SLI group.

Many of the studies relied on the Children's Communication Checklist (CCC) developed by Bishop (1998) as there were no pre-defined standards or protocols to identify PLI or to differentiate it from SLI (Botting & Conti-Ramsden, 2003; Reisinger, Cornish & Fombonne, 2011). A more recent

version of the same (CCC-2, Bishop, 2003b) has been reported to identify children whose pragmatic abilities are not proportionate to their language abilities. The checklist consists of 9 subscales and derives a 'pragmatic impairment score'. Another noteworthy research trend during this period was the interest in a component of social-cognitive development i.e., Theory of mind (ToM), and the contribution of grammar and vocabulary measures to ToM (Miller, 2001; Farrant, Fletcher & Mayberry, 2006).

In the last decade various aspects such as behavioral, emotional and social aspects have been linked to pragmatics and expressive language (St.Clair, Pickles, Durkin & Conti-Ramsden, 2011; Helland & Helland, 2017). In DSM-V (American Psychiatric Association, 2013), the term *Social (Pragmatic) Communication Disorder* (SPCD) was introduced, which is equivalent to PLI. The diagnostic criteria for SPCD are persistent difficulties in the social use of verbal and nonverbal communication, which include deficits in using communication for social purposes, impairment in the ability to change communication to match context, difficulties following rules for conversation and difficulties understanding non-literal meaning of language.

Preschoolers with language impairment are less likely than their peers to initiate topics and their conversational skills are restricted to acknowledgement of the communication partner's utterance (Kaderavak, 2015). As children with SLI reach school-age, pragmatic difficulties could result in social communication problems (Rice, 2016). Older children with SLI exhibit difficulties in entering into conversations and struggle to make conversational repairs. Furthermore, children with SLI demonstrate poor theory of mind which could affect social communication and social cognition (Shyamala, Tiwari, & Krishnan, 2011). These linguistic problems in their preschool years signal the occurrence of failures later in academic, vocational and social areas and thereby make SLI an insidious and lifelong disability.

From the review it can be noted that a relatively limited body of research has been dedicated to describing and systematically documenting the pragmatic deficits and identifying clinical markers in children with SLI as opposed to the other linguistic domains. The studies in the last few decades have mainly investigated the language patterns with emphasis on grammatical morphology and syntax, as it was considered to be the primary deficit. Very few studies have attempted the comparison of verbal and non-verbal pragmatic aspects of young children with SLI relative to the typically developing peers. Therefore, there is a lacuna with respect to research in this particular domain of language in the SLI group. Studies also attempted to delineate the diagnostic features by comparing various neurodevelopmental disorders such as ASD, ADHD, SLI and PLI or SPCD. There have been very few studies in the past dedicated specifically to investigating, identifying and profiling the pragmatic features in children with SLI across age groups. Detailed investigations in this area are crucial for effective, evidence-based interventions and will minimize the long-term effects of pragmatic language deficits. Keeping the above mentioned aspects in view, it was planned to conduct a systematic review to highlight how pragmatics is often an overlooked component of language in this heterogeneous population. The review also hopes to encourage investigators to carry out research in this

domain in future by tapping the various components of pragmatics in the language impaired population.

The aim of the study was to determine the extent to which the various components of pragmatics of language have been accurately studied, illustrated and profiled in children with SLI in the recent times. The components of pragmatics such as communicative intentions and engagement, verbal and nonverbal rules of conversation were specifically looked into.

2. Methodology

2.1. Database Searches and Article Selection

To identify the articles relevant to the topic, electronic databases were searched and studies involving the investigation of pragmatics in children with SLI were downloaded. The databases included *PubMed* which provides access to the Medline database and *Google Scholar* which is a part of the Google search engine and provides free access to a wide array of research material. Various keywords and their combinations such as language impairment, pragmatics, pragmatic language impairment, social communication deficits, social interaction and specific language impairment were entered in the databases to obtain relevant articles. Also pertinent back references from various articles were referred to for this purpose. In the *Google Scholar* database, search limit was provided for the publication date and the time frame of the research period was set to 'custom range' from 2010 to 2019, in order to obtain the latest trend in investigations related to pragmatics in SLI. Also, the sorting search limits were set to 'sort by relevance' to include full-length articles, patents and citations.

In the preliminary database, a total of 666 articles pertaining to the topic were screened. Among these articles the duplicates were excluded after which 517 articles remained. Out of these articles, after title screening, 136 articles which were relevant to the topic were selected for abstract screening. All the abstracts were screened, keeping in mind various factors such as the timeline of research, nature of access and downloadability.

An exhaustive and intensive review led to the selection of 14 studies for full length screening. These studies were submitted to further scrutiny keeping in mind the inclusion criteria mentioned below. The PICOS (participant, intervention, control, outcome and study) design proposed by Moher, Liberati, Tetzlaff and Altman (2009) was used in order to systematically filter the articles. A thorough review of the 14 articles led to the selection of 2 articles. The other 12 articles were rejected as they did not meet one or more of the inclusion criteria. The process followed has been presented in the form of a flow chart in Figure 1. The two selected articles have been discussed at length in the paper. The summary of the two articles have been outlined in Table 1 below.

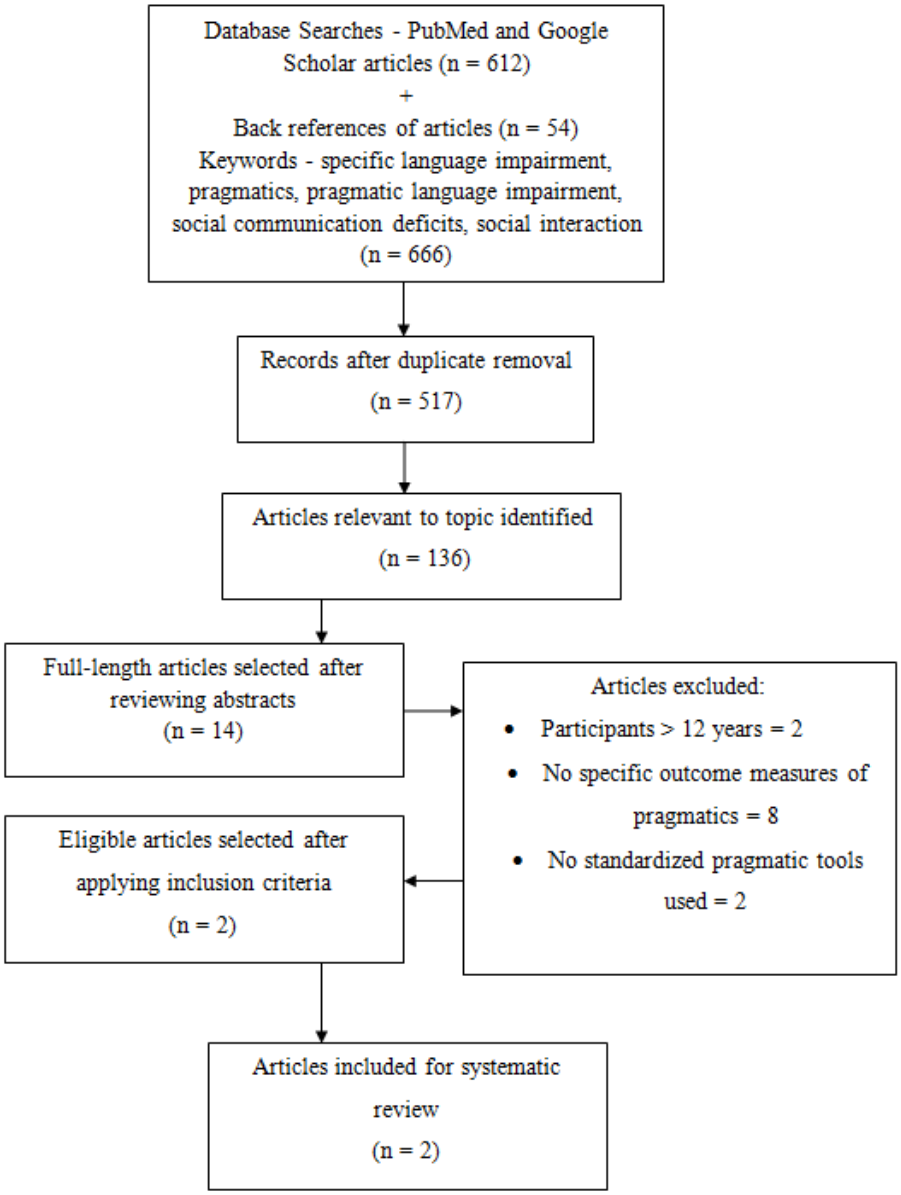

Figure 1. Flow chart depicting the procedure followed for selection of articles for review

The following criteria were used to select relevant articles:

(a) Participants who were children (≤12 years) diagnosed as SLI with no associated conditions.
(b) Studies investigating one or more of the three components of pragmatics.
(c) Studies investigating comparison of performance on the three components in groups of individuals with SLI and TD.
(d) Articles pertaining specifically to the detailed assessment of pragmatics as opposed to other components of language.
(e) Studies that utilized standardized pragmatic language assessment tools.

Table 1
Descriptive summary of the shortlisted articles based on the PICOS design

Reference	Design	Testing protocol	Outcomes	Results	Comments
Osman, Shohdi & Aziz (2011)	Standard group comparison [SLI group (n=30); TD group(n= 30)] Age range– 4-6 years.	Pragmatic screening tool	Paralinguistic parameters, describing object functions, conversational skills, intentionality, narration skills.	Independent sample test and Mann-Whitney test used for analysis. No significant differences in nonverbal paralinguistic skills between groups on most tasks. SLI group was significantly poorer w.r.t pragmatic use of language for conversational skills, intentionality, and narrative abilities.	The pragmatic aspects in young children with SLI (4-6 years) often get overlooked and thus the study is commendable for its detailed pragmatic profiling.
Ryder & Leinonen (2014)	Standard group comparison [SLI group (n=30); TD group(n= 67)] Age range- 7-11 years.	TROG, RAPT, TOWK, ITPA,Childr en's Communic ative Checklist.	Story/Scena rio context, world knowledge, irrelevant answers.	Mann-Whitney test used for analysis. Between group comparisons made using Kruskal Wallis test. Children with SLI produced more world knowledge and irrelevant answers on verbal task than the story task.	Subgrouping of SLI into children with and without PLI, which leads us to identify the key areas of deficits and its effect on expressive language.

**Note: TROG- Test for Reception of Grammar (Bishop, 2003a), RAPT - Renfrew Action Picture Test (Renfrew, 1988), TOWK - Test of Word Knowledge (Wiig & Secord, 1992), ITPA - Illinois Test of Psycholinguistic Ability (Kirk, McCarthy & Kirk, 1968)*

3. Findings

The study by Osman, Shohdi and Aziz (2011) attempted to identify and illustrate the pragmatic difficulties in preschool children with SLI by comparing them with TD children in the age range of 4 to 6 years. The participants belonged to Cairo-Egyptian ethnicity and the Arabic Pragmatic

Screening tool (Anter, Hoshy, Khaled, Shohdi & Osman, 2008) was used for assessment purpose. *Non-verbal paralinguistic abilities* including eye contact, body posture, suprasegmentals of speech such as intonation and volume, facial expressions, responding to greetings and maintenance of attention to tasks were assessed. In addition, verbal pragmatic abilities to *understand and describe object functions*, *conversation skills* including initiation, turn-taking, making conversational repairs and request for clarification, *intentionality* and *narrative skills* were evaluated by the ability to express greetings, make requests, responding to questions, picture and event description.

The results of the study revealed that with respect to the non-verbal paralinguistic abilities, there was no significant difference between the groups except on two items such as 'responding to greetings' and 'sustaining attention to a task'. However, the verbal tasks revealed a highly significant difference on all items which were attributed to both deficits in expressive language as well as to pragmatics. The children with SLI especially had deficits in conversation skills such as initiating topics, intentionality skills such as describing emotions and narrative abilities. In addition, they preferred the usage of short phrases, relative and referential pronouns, cohesive markers and conjunctions.

Therefore, the authors recommended further categorization of pragmatic assessment tools in order to differentiate between the social and linguistic deficits. Unlike the control group which rephrased sentences in order to convey meanings, the SLI group resorted to using pantomimes or refused to elaborate on their responses. The authors also hypothesized that these pragmatic difficulties may vary or worsen depending on the conversational situations and the speaker's intentions. They concluded that these difficulties could arise from an inherent deficit in processing linguistic information and thereby advocate a thorough screening of the various linguistic domains.

The second and the more recent article by Ryder and Leinonen (2014) focused on the ability of children with SLI to react to pragmatically demanding situations based on the context. The study used implicatures which are meanings derived by integrating conceptual information based on previous inferences. The study consisted of a short verbal task and a storytelling task. The verbal task consisted of two sentences which were read aloud. The sentences were followed by a question and no contextual cues were provided. In the storybook task, a short story which consisted of central characters and a theme was read aloud to the children. The storybook contained pictures and subsequently the children were required to answer simple questions related to the story. In both tasks, the attempt made by the children to verbally answer pragmatically loaded questions by integrating contextual information was analyzed.

The heterogeneous group of children with SLI was compared to age-matched TD children. The SLI group was further sub-divided to include children who exhibited predominantly pragmatic language difficulties or the PLI group and those who had no pragmatic difficulties. Children who spoke in well-formed, fluent and well-articulated utterances, but had pragmatic language difficulties were included in the PLI group. The children in this group

demonstrated deficits with turn taking, maintaining a topic, unusual content and use of language and difficulties with comprehending meaning with respect to context. Standardized language tests such as TROG (Test for Reception of Grammar), RAPT (Renfrew Action Picture Test), ITPA (Illinois Test of Psycholinguistic Abilities) and ToWK (Test of Word Knowledge) were used to assess measures such as receptive grammar, expressive grammar, auditory association and auditory memory in addition to receptive and expressive vocabulary respectively. The Children's Communication Checklist (Bishop, 2003b) was used to evaluate the communicative skills and social behavior.

The results of this study suggested that the PLI group produced more number of irrelevant answers on the verbal task than the SLI group, which was comparable to the TD group. This was attributed to the lack of contextual information in the purely verbal tasks. In adition, the PLI group produced greater number of incorrect answers than the SLI group on story task and they showed a tendency to depend on world knowledge or past experiences of situations whereas the SLI and TD groups relied on usage of story context in addition to world knowledge. These findings highlight that in response to pragmatically loaded questions, children with SLI and the TD children trusted their world knowledge by recalling something that they had previous knowledge of, based on their semantic meanings.

The study thereby indicated that the TD children and the SLI group were able to perform in a given context even though they had not fully interpreted the focal point of the question. The greater number of irrelevant answers by children with PLI on purely verbal tasks denoted a struggle to perform on pragmatically loaded questions, in the absence of contextual cues such as pictures. They also showed a tendency to succeed when the verbal scenarios were compounded by indexical or symbolic referents. In summary, the study concluded that children with SLI were slower than their peers in developing the ability to integrate available information and utilize the pertinent context in the absence of supporting referents.

4. Conclusions

In essence, the comprehensive review reveals the research trend with respect to recent investigation of the relatively neglected topic of pragmatics in SLI. It serves to highlight the dearth of studies pertaining to a systematic and detailed assessment of the pragmatic component of language in children with SLI. However, some studies illustrate the awareness regarding the lack of a 'gold standard' or a standardized assessment protocol to identify and diagnose the so called sub-group of children with SLI who present with a disproportionate deficit in their pragmatic language as opposed to the overall linguistic abilities.

In the current study two databases were searched and the freely downloadable articles were included for the systematic review. The inclusion of a few more databases would probably have given a comprehensive idea regarding similar studies carried out in this area. The inclusion criteria also could have been relaxed, which might have yielded better outcomes. However, keeping the criteria stringent results in a more organized and structured review process. In addition, behavioral issues and other social

and psychological adjustment issues have been avoided in the study and strict adherence to the linguistic aspect of pragmatics has been preserved. Including these features would yield a wider understanding regarding the non-linguistic pragmatic difficulties faced by this population in day-to-day life.

5. Discussion

The present study aimed to shed light on the research carried out in the last decade in the area of pragmatics of language in children with SLI. The study also intended to outline the trend in the development of terminologies, diagnostic criteria and assessment tools with respect to pragmatics in language impaired children and to highlight the limited studies pertaining to it in children with SLI. It is interesting to note that very few studies made an effort at a detailed evaluation of pragmatics relative to syntactic and semantic aspects.

A systematic review of various databases revealed numerous studies which had explored one or more of the different components related to the pragmatics of language. However, very few studies attempted to systematically profile the pragmatic deficits in detail. This could be attributed to the lack of specific test materials probing the various pragmatic components in depth or due to the lack of clarity regarding the diagnostic indicators which could lead to an overlap between children with pragmatic language deficits (PLD) and children with pure SLI. Also, since deficits in morphosyntax and semantics are more evident in this population, researchers tend to focus on these aspects. The studies also tended to compare pragmatic deficits in various neurodevelopmental disorders wherein the focus on SLI was lost.

The widespread review of literature led to narrowing down and selection of 14 articles which elucidated the pragmatic deficits in SLI. It is startling that the outcome of filtering was such a small number of articles (two) which again highlights the limited research carried out in this area. Therefore, the present study highlights the fragmentation of components and lack of uniformity in illustrating the pragmatic deficits in children with SLI.

As it has been documented across the years that deficits in social interaction also form a cluster of deficits in this group, more efforts need to be made in order to develop a detailed testing protocol. Uniformity in assessment of pragmatic components to an extent has to be attempted as this is a heterogeneous group and there is a lack of consensus regarding the diagnostic features due to overlapping conditions.

Of the two selected articles, the study by Osman, Shohdi and Aziz (2011) made an endeavor to investigate and profile purely the verbal and non-verbal pragmatic deficits in children with SLI using a standardized pragmatic screening tool. The study also highlights the importance of early identification of pragmatic deficits which could affect the social communication, peer interaction and literacy acquisition at later stages. It also specifies the importance of looking into the differences between actual expressive deficits versus pragmatic difficulties during evaluation. This study also underlines the need for speech-language pathologists (SLPs) to evaluate

the communicative deficits, specifically the pragmatic performance under generalized situations in children with SLI.

Certain tasks in the study such as conversational skills, description of events, pictures and narrations maybe unable to tap purely the pragmatic aspects and could be influenced by the underlying expressive linguistic deficits. This has been corroborated by previous authors who have outlined the difficulties in differentiating pragmatic impairments from receptive-expressive language deficits using descriptive tasks (Botting & Conti-Ramsden, 1999; Reisinger, Cornish & Fombonne, 2011). The language ages of the participants have not been mentioned in the study and even though the children with SLI had an MLU which was around 5, it can be assumed that they demonstrated notable deficits in their expressive language. Therefore, there is a need to use stringent pragmatic assessment tools which attempt to distinguish between the structural language and pragmatic deficits. The subgrouping of the SLI group could have thrown some light on the effect of poor receptive or expressive language age on the pragmatic output. Further, the experimental and control groups were matched with respect to chronological age. It would be interesting to study the correlation of these trends, if a language-matched group had been included in this study.

The study highlights the necessity for a thorough and detailed evaluation of pragmatic skills while assessing the communication deficits of children with SLI. However, the study fails to explore the diverse nature of the population by sub-grouping them based on pragmatic deficits. This was carried out by Ryder and Leinonen (2014) who divided the SLI group to include children with purely pragmatic language deficits. Although no standardized test materials specific to pragmatic abilities were used, the findings revealed interesting pragmatic strategies used by children with SLI and PLD as opposed to the TD group.

The study by Ryder and Leinonen (2014) was an endeavor to analyze and interpret the strategies used by children with SLI during pragmatic language comprehension and expression. It makes use of the relevance theory and the emergentist view in order to explain these strategies. Using these theories, it has been suggested that pragmatic language development predominantly involved the ability to interpret relevant context and utilized the capability to integrate various sources of information to process and extrapolate language respectively. The study also explored the relation between receptive and expressive grammar and PLD. It is one of the few studies which provided important strategies for pragmatic language therapy in clinical settings with respect to providing additional context in this population. Subgrouping of the SLI group to include PLD was a good attempt to highlight the deficit trends in the pragmatic output.

The study illustrates only a section of pragmatic comprehension and no attempt was made to profile and investigate the pragmatic components of language in detail in children with SLI by making use of standardized testing protocols. Other than the CCC which was used to evaluate the communicative skills and social behavior, no tests were specifically used to diagnose children as PLI. The SLPs were instructed to identify children with PLD in their routine evaluation. Detailed procedure regarding how this

diagnosis was made has not been provided. It would also be interesting to note the correlation of these trends, if a language-matched control group had been included in the study.

The study highlighted the necessity for a detailed evaluation of pragmatic skills for subgrouping children with predominantly pragmatic language deficits in the SLI group. This would have far reaching effects in language intervention wherein contextual cues could be supplemented for the integration of information in pragmatically loaded situations. Since SLI is a heterogeneous group, such differentiation or subgrouping will help in providing additional support. Similar to the first article, this study also draws attention to the urgent need to differentiate between pragmatic and structural language deficits and the necessity to develop stringent assessment protocols for the same. Thus, the present study endeavors to point out to the lacunae in pragmatic language assessment in children with SLI and the need for developing standardized and uniform testing protocols for pragmatics in this population.

The present review will aid future researchers to fill in the lacunae in terms of structured assessment with respect to pragmatics in SLI. The various components and strategies reviewed in this article would also help clinicians to plan appropriate techniques during intervention. It would aid in investigating whether the child has an underlying pragmatic language deficit, which could be affecting the expressive language. Future evidence-based research in this direction would help in identifying and reducing the social interactive deficits faced life-long by children with SLI.

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References

Adams, C., & Bishop, D. V. M. (1989). Conversational characteristics of children with semantic-pragmatic disorder: Exchange structure, turn taking, repairs and cohesion. *International Journal of Language and Communication Disorders*, *24*(3), 211-239. doi:10.3109/13682828909019889

American Psychiatric Association. (2013). *American Psychiatric Association: Diagnostic Statistical Manual of Mental Disorders*. Retrieved from http://www.psychiatryonline.org./APA_DSM-5-Social-Communication-Disorder20(2).pdf

Anter, A. A., El Hoshy, Z. H., Khaled, A. M., Shohdi, S. S., & Osman, D. A. (2008). *Pragmatic development in normal children* (Unpublished MD thesis). Retrieved from http://www.sciencedirect.com/science/article/pii/S0165587610004957?via%3Dihub

Bishop, D. V. M. (1998). Development of the Children's Communication Checklist (CCC): A method for assessing qualitative aspects of communicative impairment in children. *Journal of Child Psychology and Psychiatry*, *39*(6), 879-891. doi:10.1111/1469-7610.00388

Bishop, D. V. M. (2000). Pragmatic language impairment: A correlate of SLI, a distinct subgroup, or part of the autistic continuum? In D. V. M. Bishop, & L. B. Leonard (Eds.), *Speech and language impairments in children: Causes, characteristics, intervention and outcome* (pp. 99-113). Hove, England: Psychology Press.

Bishop, D. V. M. (2003a). *Test for reception of grammar 2*. London: Psychological Corporation.

Bishop, D. V. M. (2003b). *The Children's Communication Checklist version 2*. London: Psychological Corporation.

Bishop, D.V.M. (2014). Ten questions about terminology for children with unexplained language problems. *International Journal of Language and Communication Disorders*, *49*, 381– 415. doi:10.1111/1460-6984.12101

Bishop, D.V.M. (2017). Developmental Language Disorder (DLD): The consensus explained. Retrieved from http://www.slideshare.net/RADLD/developmental-language-disorder-dld-the-consensus-explained

Bishop, D. V. M., Chan, J., Adams, C., Hartley, J., & Weir, F. (2000). Conversational responsiveness in specific language impairment: Evidence of disproportionate pragmatic difficulties in a subset of children. *Development and Psychopathology*, *12*(2), 177-199. doi:10.1017/s0954579400002042

Bishop, D. V. M., & Donlan, C. (2010). The role of syntax in encoding and recall of pictorial narratives: Evidence from specific language impairment. *British Journal of Developmental Psychology*, *23*(1), 25-46. doi:10.1348/026151004X20685

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

Botting, N., & Conti-Ramsden, G. (1999). Pragmatic language impairment without autism: The children in question. *Autism, 3*(4), 371-396. doi:10.1177/1362361399003004005

Botting, N., & Conti-Ramsden, G. (2003). Autism, primary pragmatic difficulties and specific language impairment: Can we distinguish them using psycholinguistic markers? *Developmental Medicine and Child Neurology*, *45*(8), 515-524. doi:10.1017/s0012162203000963

Conti-Ramsden, G., & Botting, N. (2004). Social difficulties and victimization in children with SLI at 11 years of age. *Journal of Speech, Language and Hearing Research*, *47*(1), 145-161. doi:10.1044/1092-4388(2004/013)

Cordier, R., Munro, N., Wilkes-Gillan, S., Speyer, R., & Pearce, W. M. (2014). Reliability and validity of the Pragmatics Observational Measure (POM): A new observational measure of pragmatic language for children. *Research in Developmental Disabilities*, *35*(7), 1588-1598. doi:10.1016/j.ridd.2014.03.050

Craig, H. K., & Evans, J. L. (1989). Turn exchange characteristics of SLI children's simultaneous and non-simultaneous speech. *Journal of Speech and Hearing Disorders, 54*(3), 334–347. doi:10.1044/jshd.5403.334

Craig, H. K., & Evans, J. L. (1993). Pragmatics and SLI: Within-group variations in discourse behaviors. *Journal of Speech, Language and Hearing Research*, *36*(4), 777-789. doi:10.1044/jshr.3604.777

Farrant, B. M., Fletcher, J. & Mayberry, M. T. (2006). Specific language impairment, theory of mind, and visual perspective taking: Evidence for simulation theory and the developmental role of language. *Child Development*, *77*(6), 1842-1853.doi:10.1111/j.1467-8624.2006.00977.x.

Fey, M., & Leonard, L. (1983). Pragmatic skills of children with specific language impairment. In T. Gallagher & C. Prutting (Eds.), *Pragmatic assessment and intervention issues in language* (pp.65-82). San Diego, CA: College-Hill press.

Helland, W. A., & Helland, T. (2017). Emotional and behavioral needs in children with specific language impairment and in children with autism spectrum disorder: The importance of pragmatic language impairment. *Research in Developmental Disabilities*, *70*, 33-39. doi:10.1016/j.ridd.2017.08.009

Joanisse, M. F., & Seidenberg, M. S. (1998). Specific language impairment: A deficit in grammar or processing? *Trends in Cognitive Sciences*, *2*(7), 240-247. doi:10.1016/S1364-6613(98)01186-3

Kaderavak, J. N. (2015). *Language disorders in children: Fundamental concepts of assessment and intervention*, 2nd edition. Boston: Pearson Publishers.

Kirk, S. A., McCarthy, J. J., & Kirk, W. D. (1968). *Illinois test of psycholinguistic abilities*. Illinois: University of Illinois.

Leinonen, E., Letts, C., & Smith, B. R. (2000). *Children's Pragmatic Communication Difficulties*. London: Whurr Publishers.

Leonard, L. B. (2014). *Children with specific language impairment*. Cambridge, MA: MIT press.

Marton, K., Abramoff, B., & Rosenzweig, S. (2005). Social cognition and language in children with specific language impairment (SLI). *Journal of Communication Disorders*, *38*(2), 143-162. doi:10.1016/j.jcomdis.2004.06.003

McTear, M., & Conti-Ramsden, G. (1992). *Pragmatic disability in children*. London: Whurr Publishers.

Miller, C. A. (2001). False belief understanding in children with specific language impairment. *Journal of Communication Disorders*, *34*(1-2), 73-86. doi:10.1016/s0021-9924(00)00042-3

Mills, A., Pulles, A., & Witten, F. (1992). Semantic and pragmatic problems in specifically language impaired children: One or two problems?

Scandinavian Journal of Logopedics and Phoniatrics, *17*(1), 51-57. doi:10.3109/14015439209099182

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred reporting items for systematic reviews and meta analyses: The PRISMA statement. *Annals of Internal Medicine, 151*(4), 264–269. doi:10.7326/0003-4819-151-4-200908180-00135

Osman, D. M., Shohdi, S., & Aziz, A. A. (2011). Pragmatic difficulties in children with Specific Language Impairment. *International Journal of Pediatric Otorhinolaryngology, 75*, 171-176. doi:10.1016/j.ijporl.2010.10.028

Reisinger, L. M., Cornish, K. M., & Fombonne, E. (2011). Diagnostic differentiation of autism spectrum disorders and pragmatic language impairment. *Journal of Autism and Developmental Disorders*, *41*(12), 1694-1704. doi:10.1007/s10803-011-1196-y

Renfrew, C. E. (1988). *The Renfrew Action Picture Test*. Bicester: Winslow Press.

Rescorla, L., & Lee, E. C. (2000). Language impairment in young children. In T. L. Layton, E. R. Crais, & L. R. Watson (Eds.), *Handbook of early language impairment in children*: *Nature*. Albany, NY: Delmar.

Rice, M. L. (2016). Children with Specific Language Impairment and Their Families: A Future View of Nature Plus Nurture and New Technologies for Comprehensive Language Intervention Strategies. *Seminars in Speech and Language*, 37(4), 311-318. doi:10.1055/s-0036-1587701

Ryder, N., & Leinonen, E. (2014). Pragmatic language development in language impaired and typically developing children: Incorrect answers in context. *Journal of Psycholinguistic Research, 43*(1), 45-58. doi:10.1007/s10936-013-9238-6

Shyamala, K. C., Tiwari, S., & Krishnan, G. (2011). Development of assessment batteries for bilingual Kannada-English and Malayalam-English children with SLI. AIISH Research Fund Project, University of Mysore, Mysore.

Siddiqui, A. (2018). The principle features of English Pragmatics in applied linguistics. *Advances in Language and Literary Studies*, *9*(2), 77-80. doi:10.7575/aiac.alls.v.9n.2p.77

St Clair, M. C., Pickles, A., Durkin, K., & Conti-Ramsden, G. (2011). A longitudinal study of behavioral, emotional and social difficulties in individuals with a history of specific language impairment (SLI). *Journal of Communication Disorders*, *44*(2), 186-199. doi:10.1016/j.jcomdis.2010.09.004

Tsimpli, I. M., Peristeri, E., & Andreou, M. (2016). Narrative production in monolingual and bilingual children with specific language impairment. *Applied Psycholinguistics, 37*, 195-216. doi:10.1017/S0142716415000478

Vance, M., & Wells, B. (1994). The wrong end of the stick: Language-impaired children's understanding of non-literal language. *Child Language Teaching and Therapy*, *10*(1), 23-46. doi:10.1177/026565909401000102

Wiig, E., & Secord, W. (1992). *Test of Word Knowledge*. London: The Psychological Corporation.