

Bilingual Children with Developmental Language Disorder: Outcomes and Interventions

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Abstract. Developmental language disorder, as one of the most frequent disorders in children is also prevalent in bilingual children. This review analyzed recent research collected from APA Psycinfo and summarizes the impact of developmental language disorder on linguistic skills and academic performance and its effective interventions. For intervention, examples of additive curriculum-based intervention, the Heidelberg Parent-based Language Intervention (HPLI) and cognitive-behavioral play therapy are discussed. As a result, bilingual children with developmental language disorders can exhibit impaired linguistic skills and lower academic achievement. School-based, home-based, and clinical interventions demonstrated both advantages and disadvantages. Therefore, the use of a combination of interventions in different settings collaboratively is recommended to promote language learning. Contribution from this review supports the need for additional research on intervention for bilingual children with developmental language disorders to create an interactive communication environment that promotes language development for bilingual children with developmental language disorders.

Keywords: Bilingual children; Developmental language disorder; Language intervention.

1. Introduction

Bilingualism has been increasingly common and, on the rise, worldwide; it is identified as the ability to use two languages in daily life. Recent estimates indicate that there are approximately 3.3 billion people globally, accounting for 43% of the population. Bilingual children especially refer to typically developing children with a normal hearing under the age of 12 who can and need to communicate in more than one language in everyday life. Developmental language disorder (DLD) is suggested to be the most frequent disorder in childhood and is defined as a persistent language delay that is still not being resolved when a child reaches five years old. It hinders communication and/or learning in daily life while medical conditions, including cognitive, affective, motor, sensory, and socio-environmental deficiencies, are not involved [4, 5]. Language difficulties in both languages are present in bilingual children with developmental language disorder, especially in language perception, processing, and production, such as immature phonological processes, slower word retrieval and naming error, and shorter mean length of utterance compared to normal developing bilingual children. Additionally, it has been shown that children with DLD have poorer academic achievement due to their impaired language processing abilities, including phonological memory, auditory attention, and verbal fluency. Moreover, it can result in problems in behaviour and psychiatry and disturbances in emotional and social adaptation, which persist in adulthood and throughout an individual's whole life. Consequently, language interventions have been developed and proved their effectiveness in enhancing both expressive and receptive skills in oral language, including vocabulary, grammar, narration, phonology, and pragmatics. It can be delivered through various formats by different figures: speech and language therapists, teachers, and parents under the supervision of clinicians; occurred in many locations: clinical environment, school, and home; differed in frequencies and durations considering the individual differences. More importantly, previous research has demonstrated controversies in the language used for intervention: first (L1) or second language (L2) or the combination of both due to different theoretical concerns [8, 9]. Hence, the aim of the current review is to examine the outcomes of bilingual children with developmental language disorder

and to evaluate the efficacy of various interventions for these children taking into account the language of the intervention.

2. Methods

The database of APA Psycinfo was utilized to carry out an exhaustive search of the published literature. In connection to developmental language disorder and bilingual children, the following search phrases were entered: “language intervention”, “academic outcomes”, “cognitive abilities”, “clinical implications”, and “parent interventions”. The studies were chosen based on the total amount of citations, relevance, and the data the research was conducted. The research was guaranteed to be of high quality in terms of their writing as well as their reliability and precision.

3. The Outcomes of Bilingual Children with DLD

According to earlier research on the symptoms displayed by bilinguals with DLD, the consequences are mostly manifested in linguistic abilities. The impact, in turn, can be seen in academic achievements.

3.1 Bilingual Children with DLD Compared to Monolingual Children with DLD

Firstly, since there were popular misconceptions about whether acquiring two languages would cause or intensify language disorders [10, 11], previous research examined the morphosyntactic skills in bilingual (English and French) children with DLD compared to monolingual children (English or French) with DLD. Participants completed a language background questionnaire, and different scales were administered to measure the morphosyntactic skills of the children, naturalistic 30-45-min play sessions with the participants were also recorded in video format. The findings revealed that tense morphemes exhibited identical mean accuracy scores for bilingual and monolingual children with DLD, suggesting that bilingual children did not have more severe difficulties in using grammatical morphemes than their monolingual peers. It also suggested that bilingual children do not experience an increased risk for language impairment due to acquiring more than one language. However, bilingual children can experience a slower rate of learning both languages compared to monolingual children at the same age, and the impaired language skills can be intensified in those with developmental language disorders.

3.2 Impact on Linguistic Skills

Different aspects of language such as processing, production and comprehension can be affected by developmental language disorder in varying levels of severity. For instance, researchers examined the performance of linguistic skills by comparing the 11 Italian-German bilingual children with DLD and 11 typical developing bilinguals. Assessments on lexical, grammatical, and discourse skills were carried out. Results demonstrated that bilingual children with DLD performed significantly worse in naming tasks and semantic errors and understood fewer words on lexical measures in both languages. Children with DLD also produced more violations of local coherence and fewer informative words on discourse production measures in both languages. Indicating that short-term phonological memory and lexical abilities in bilingual children with DLD were impaired, which reduces the levels of local coherence and informativeness for narratives. . Similarly, bilingual Spanish-Catalan children with DLD in previous research also showed significantly pronounced difficulties in phonological awareness in manipulating segments of the words, and in maintaining verbal units in phonological memory. More importantly, language processing skills, including phonological memory, and rapid naming phonological awareness, are proven to be closely associated with academic achievements.

3.3 Impact on Academic Achievements

Previous research elucidated that children with DLD experience a higher risk of poor academic performance in both language-related subjects and other subjects. It is common for language difficulties of children with DLD to be manifested in pre-school and early primary school, when children are transitioning from oral to written language at a time when literacy relies on phonetic mapping. Additionally, studies have shown that children with DLD may struggle with behavioral, mental, emotional, and social adjustments, which may limit their ability to work and interact with others in adulthood. . Moreover, researchers also highlighted those children who resolved language difficulties before five years old showed greater academic performance than compared to those who persisted with language difficulties. Indicating the need for intervention earlier to prevent the long-term impact of language difficulties on academic performance. Furthermore, studies on the academic performance of bilingual children with DLD are still limited in numbers, and since the previous research on the academic performance of children with DLD was mainly conducted among English speakers. Therefore, whether the consequences can be replicated in other languages and the educational system remains unclear. Hence, additional research should be carried out in the future to determine the academic and psychological outcomes of bilingual children with DLD with a non-English background.

4. Interventions for Bilingual Children with DLD

With the outcomes of bilingual children with DLD, literatures offer a wide range of rehabilitation interventions with not only variability in targeting different aspect and domains of language, but also the methods of administration by different figures, the location of intervention and the frequency and duration of intervention. The current review focused on the different settings in the interventions being delivered: school-based interventions, parent-based interventions and clinical interventions.

4.1 Language of Intervention

The language used for intervention is the central concern for bilingual children with DLD. Since the language of intervention can serve as both the target and the medium of intervention. It is generally selected based on the assessment results (language dominance) and the child's needs (current communicative contexts). However, there is still an inconsistency in the literature on which is the most effective way. The advantage of targeting the stronger language would be the stronger language is a stronger medium that can produce a more practical result that better provide information in a familiar environment for the child. On the other hand, intervention focus on both languages allows the child to utilize all of the available tools and resources rather than be restricted to one subject, especially for bilinguals who have two communicative environments involving two cultures. Moreover, the ability of Speech-Language Pathologists to speak more than one language is also limited. Hence, although the current suggestions for the language used in interventions showed differences, future research can be conducted to develop approaches that cater to the needs of the children and maximise the result of intervention.

4.2 School-based Intervention

Integrated interventions, which emphasize on the quality of teacher-child interaction and additive curriculum-based interventions which in line with the curriculum requirements of reading and comprehension abilities are prevalent in the school setting. A study examined the feasibility of an integrated intervention focused on semantic and narrative skills in a sample of 13 first-grade Spanish-English Bilingual children at risk of DLD. The intervention is designed parallel to the U.S. First-grade curriculum, which consists of five thematic units, each including an expository and narrative text, formed the basis of the 24 lessons. Moreover, vocabulary targets were adopted to practice decoding and text fluency skills and improving semantic skills. Printed cards with 3-6 words are distributed to children in each lesson and required them to identify the words when reading selected

text. Then viewed a picture that represented the words and used the words to describe the picture from the texts. Throughout this process, children were actively explored the semantic meaning of the words utilizing the contextual and morphosyntactic cues, the repeated exposure to the words enables the enhancement of the memorization. Furthermore, the intervention also aimed to improve the narrative skills by requirements of identifying the story setting, character information, causal relationships, vocabulary and grammar and episode structure in narratives. Results suggested that children showed greater improvements in the comprehension and production of narratives, and the breadth and depth of semantics for the intervention language (Spanish). Indicating the feasibility of curriculum-based intervention for bilingual children at the risk of DLD. Nevertheless, since the result of current study are collected one week after the intervention, the long-term effectiveness of the intervention remains unknown. Therefore, a six-months and a one-year follow ups could be incorporated to assess whether the improvements could be sustained in a long run.

4.3 Parent-based Intervention

There is an increasing use of indirect approaches of interventions for children with DLD that intend to optimize the communication environment in the family which often done by training parents in the interaction between parent and child. For example, a study examined the effectiveness of parent-based language intervention for 61 children with DLD. The intervention utilized the Heidelberg Parent-based Language Intervention (HPLI) which developed for use with a group of 5-10 parents. It consists of seven 2-hour sessions last for 3 months and one 3-hour session after six months. The HPLI introduces parents a variety of child-centered, interaction-promoting language modelling techniques, which assumes that optimized parental input can provide between language learning opportunities for children. The use of picture book sharing is highlighted in the programme since it gives the opportunities to initiate communication and learning new words. Results suggested children with DLD showed improvements in vocabulary and grammatical abilities after parental intervention. Indicating the interactive style of the parents can promote the language development for child with DLD. However, the experiment only involved mothers in the programme, whereas the presence of fathers also showed a strong link to the behaviors and outcomes of children. Therefore, future experiments should facilitate the involvement of fathers in the parental intervention programme to determine the potential impact of the interactive style of fathers in assisting language developmental for children with DLD. More importantly, there are also concerns around the cultural sensitivity of parental intervention for bilingual children with DLD. Previous research suggested that the most common intervention technique is to encourage children to communicate and modify adults' communication styles to match those of children. The strategy reflected the values of the North-American middle-class mainstream culture but might be seen as uncomfortable and unacceptable for other cultures. Hence, clinicians should avoid communicate established values by actively listen to the hopes and concerns of the families to provide suggestions in instructional methods and interaction styles.

4.4 Clinical Interventions

Clinical interventions including phenological therapy, cognitive-behavioral play therapy delivered by Speech-Language Pathologists and clinicians have been widely adopted to promote language learning [21, 22]. More specifically, previous research highlighted that the cognitive-behavioral play therapy as a form of psychological treatment emphasized the participation of the children and used play therapy as a paradigm with the addition of cognitive and behavioral techniques. Therefore, giving the opportunities for children to express their intrusive thoughts and exercise their communicative skills through games. Evidently, a study examined the effectiveness of the cognitive-behavioral play therapy in improving expressive language disorder in a sample of 60 bilingual pre-school children aged 6 years old with developmental language disorders. The cognitive behavioral therapy required children in the experimental group to complete tasks involved storytelling, story making, painting, and perform different cognitive and behavioral games such as role-playing,

modeling and puppet shows in an interactive setting. During intervention, the objective for therapists is to identify and reconstruct the dysfunctional and negative cognitions of the bilingual children with DLD and replaced them with functional thinking. There were in total 12 sessions required, and each lasted 90 minutes being carried out three times per week for 4 weeks. Results suggested that children in the experimental groups showed improved performance in defining, expressing, and recalling words, grammatical completion of sentences, self-introduction, and expressing emotions and thoughts in the final test, demonstrating the effectiveness of cognitive-behavioral play therapy in improving language expressive skills for bilingual children with language disorders. However, the effectiveness of the current clinical approach is limited due to the impossibility of controlling the interfering variables such as parental literacy, socioeconomic status, and their partnership with children during the intervention process. Therefore, combining clinical approaches with parent-based interventions may help bilingual children with language difficulties communicate more effectively at home and in other social contexts.

5. Implications

Based on the various consequence for bilingual children with DLD, the objective of this review is to provide support for clinicians, teachers and parents an accessible tool to understand the developmental language disorder and the effectiveness of various interventions especially in the context of bilingualism. Since acquiring more than one language is complicated especially for bilingual children with DLD. Clinicians should obtain as much information as they can from as many sources, ideally testing all language skills in both languages to determine the language for intervention or the combination of both. Moreover, if primary school teachers are aware of the quality of interaction between them and the bilingual children with DLD, the children can better engage in the associated tasks which can improves their language proficiencies. Furthermore, since the previous individualistic approach targeted on the child alone is being increasingly replaced by the involvement of parents in the intervention. Other than mothers, the involvement of fathers or even grandparents should also be encouraged to engage in the trained interventions to create a harmonious, interactive communication environment in the family to assist the children to exercise their language abilities in daily life. More importantly, clinicians who utilized cognitive-behavioral play interventions as a psychological treatment should also encourage the addition of parents-based intervention to improve the language skills of bilingual children with language disorders in both at home and social settings.

6. Conclusion

With the increase of bilinguals around the world, bilingual children do not experience an increased risk for language impairment due to acquiring more than one language. However, bilingual children with DLD can experience impaired ability in language production, comprehension, and processing. The deficits in linguistic skills and cognitive correlates can lead to low academic performance and exhibit deficits in behavioural, psychiatric, emotional, and social adaptations, which are persistent in adult life. Consequently, interventions such as additive curriculum-based interventions in the school setting, parent-based language interventions at home and cognitive-behavioral play therapy in a clinical setting are utilized to facilitate language learning. Although each of these approaches has its own set of advantages in terms of promoting language development, they also each come with a set of disadvantages and concerns. As a result of this, it is recommended that a combination of interventions to be utilized to address this issue and carefully consider the impact of cultural sensitivity in the bilingual context. In conclusion, there is an essential need for additional research to be conducted in the future to develop more comprehensive and practical interventions that will assist clinicians, teachers/educators, and parents in creating an interactive communication environment that fosters language development for bilingual children with developmental language disorders.

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