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Phonological Awareness Skills of a Hindi Speaking Children with Mild Intellectual Disability

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Abstract

Phonological awareness (PA) is a key precursor to literacy development, yet children with mild intellectual disability (ID) often demonstrate delays or atypical patterns in PA acquisition. This case study examines the phonological awareness skills of a 6-year-old Hindi-speaking child with mild ID using the Phonological Awareness Test for Hindi-Speaking Kindergarten Children (PATH-KG). The child was assessed across rhyme-, syllable-, and word-level tasks corresponding to developmental expectations for 3- to 5-year-olds. Results showed strong foundational PA abilities, including full scores in rhyme generation, syllable blending, syllable segmentation, and word counting. Moderate difficulty was noted in rhyme discrimination and rhyme oddity tasks. Marked weaknesses emerged in advanced word-level manipulation tasks such as word deletion, substitution, and sentence-level switching. The findings reveal an uneven PA profile, with intact basic skills but impaired higher-order processing. Targeted intervention focusing on complex phonological and syntactic skills is recommended to support literacy development.

Key Words: Phonological Awareness; Mild Intellectual Disability; Hindi-speaking Children; Rhyme Awareness; Syllable Segmentation; Word Manipulation;

Phonological awareness (PA) refers to an individual's ability of recognizing, discriminating, and manipulating the sounds in his/ her language, regardless of the size of the focused unit (Anthony & Francis, 2005). It refers to children's knowledge of the sound structure of a language as well as the ability to manipulate this sound structure (Burt et al., 1999). Phonological awareness develop at four levels, viz: word level, syllable level, onset- rime level and phonemic level (Lane, Pullen, Eisele, & Jordan, 2002). Among these, word level is the easiest, while phonemic level is the most difficult (Adams, 1990). Development of phonological awareness will allow the child to tell you when two words end with the same sound (Eleanor, 2009). A child who has phonological awareness can tell you when two words rhyme and when two words start with the same sound.

Intellectual disability is a state of interrupted and incomplete mental development that is particularly characterized by the impairment of those abilities that occur during the development period and that affect the general level of intelligence, such as: cognitive, speech, motor and social abilities (WHO, 1992).The causes of intellectual disability are divided into: prenatal (viral infections, bacterial infections, spirochete infections, parasitic diseases, exposure to toxins, consumption of certain drugs, excessive smoking, ionizing radiation, anorexia in the mother, malnutrition in the mother, endocrine disorders, others), perinatal (fetal asphyxia, intracranial hemorrhage, hyaline lung membrane in the newborn, mechanical pressures on the fetus, prematurity, others) and postnatal (infections, exposure to toxins, malnutrition, endocrine disorders, head injuries, vascular disorders, immune reaction, others).

Intellectual disability is a condition that not only affects the individual's quality of life but also poses challenges for their family, educators, and society as a whole. Disruptions appear in behavior, social adjustment, communication, motor skills, emotions, feelings, perception, imagination, attention, thoughts, memory, time-space context, willpower, and temperament. Intellectual disability is categorized based on the level of impairment into: mild intellectual disability, moderate intellectual disability, severe intellectual disability, profound intellectual disability, and other unspecified forms of intellectual disability. The structure of internal dialogue, or the arrangement of verbal reasoning, is essential for an individual to comprehend sense, reflect, and communicate effectively.

Dessemontet and Chambrier (2015) in their study "The role of phonological awareness and letter-sound knowledge in reading development of children with intellectual disabilities" involved 129 children aged 6 to 8 with mild or moderate intellectual disabilities who took an academic achievement test. Results showed that at ages 6-8, phonological awareness and letter-sound knowledge forecasted improvements in reading both words and non-words after one school year and two school years, while accounting for IQ, age, expressive vocabulary, spoken language, and type of placement. Phonological awareness and letter-sound recognition at ages 6-

8 also forecasted improvement in reading comprehension after one and two years of school. These results indicate that developing phonological awareness skills alongside direct phonics instruction is crucial for promoting reading advancements in children with mild to moderate intellectual disabilities of unknown origin.

The study "Exploring Phonological Awareness Skills in Children with Intellectual Disability" (Dessemontent, Chambrier, Martinet & Moser, 2017) compared the phonological awareness abilities of 7 to 8-year-old children with intellectual disabilities to those of 4 to 5-year-old typically developing children matched for early reading skills, vocabulary, and gender. Kids with intellectual disabilities showed a significant deficit in phonological awareness. Syllable blending, syllable segmentation, and initial phoneme detection seemed to be retained. In comparison, children with intellectual disabilities exhibited a significant deficiency in detecting rhymes and a minor deficiency in blending phonemes. Two academic years later, these deficits had disappeared. The results from this study indicate that children with intellectual disabilities exhibit an unusual pattern in phonological awareness that evolves over time.

Studies investigating the phonological awareness skills of children with Intellectual disability (ID) with an unspecified or mixed etiology are scarce. Channell, Loveall, and Conners (2013) compared the reading-related skills of 12- to 19-year-old youths with ID with mixed etiology to those of younger typically developing children who were matched for verbal mental age. Phonological awareness and phonological memory were found to be weaknesses in youths with ID. Van Tilborg, Segers, von Balkom, and Verhoeven (2014) also found that 6- to 8-year old children with ID with mixed etiology under performed younger typically developing children who were at the same phase of literacy acquisition.

The National Curriculum Framework for Foundational Stage (NCF) (2022) and the National Council of Educational Research and Training (NCERT) have strongly advised promoting the development of Phonological Awareness skills for Indian children aged 3–8 years. Different competencies related to curricular objectives for developing Phonological Awareness skills have been specified for children aged 3 to 6 years.

India is a multilingual and multicultural country with a population which had wide variations in the socioeconomic status as well as pre literacy practices. The development of phonological awareness varies across all these factors. Hence there is a **need** to study phonological awareness across languages and cultures; and study the typically developing populations across different languages and culture. This will help to understand the development of phonological awareness in the Indian children.Hence, this study **aims**to assess the phonological awareness skills in three linguistic levels, rhyme, syllable and word level in a child with mild intellectual disability who attend Hindi medium school.

Method

The aim of this study was to investigate the phonological awareness skills of a Hindi speaking child with mild intellectual disability. The Phonological Awareness Test for Hindi Speaking Kindergarten Children (PATH-KG) (Rawat & Kiran, 2024) was used as assessment tool for assessment of phonological awareness skills of a child with mild intellectual disability.

The PATH-KG test measures phonological awareness skills among 3 to 6 years old native Hindi speaking children. The test consists of tasks at different linguistic levels. These linguistic levels are rhyme, syllable and word level. There are different tasks at each linguistic levels which includeRhyme Generation in the Unfamiliar Poem (RG-UP), Rhyme Discrimination (RD), Rhyme Oddity (RO), Rhyme Word Generation (RWG), Syllable Blending (SB), Syllable Segmentation (SS), Word Counting (WC) (No. of Words in a Sentence), Word Deletion (WD), Word Substitution (WSub), Word Switching in a Sentence (WSw).

Administration & Scoring:

Administration: The test is designed to assess native Hindi speaking kindergarten children in the three age groups namely 3 years 0 months to 3 years 11 months, 4 years 0 months to 4 years 11 months and 5 years 0 month to 5 years 11 months. There are different tasks and respective test items for each age group. Each age group has separate test sheet and score sheet. The score sheet has details of the test items, obtained score for each test item and obtained total scores.

Scoring: The test item has been given score of 1 for correct answer and 0 for incorrect answer. The scores are to be recorded on the score sheet.

Case Report:

The patient is a 6-year-old male child from arural background, currently studying in the 1st standard at a Hindi-medium school. He has been diagnosed with Mild Intellectual Disability.As reported by mother of the child, behavioral problems have been present since the age of 2 to 3 years. The child has shown multiple behavioral difficulties and struggles in interacting with peers of his age group. His mother reported that his temper issues began early and gradually worsened over time; he would become angry over trivial matters.

These behavioral problems extend to his interactions with other family members, including his father and sister. When asked to do tasks he dislikes, he often reacts by throwing objects at family members or using inappropriate language. At school, he frequently refuses to follow teachers' instructions and avoids participation in class activities. His noncompliance often escalates into aggressive outbursts, which have led to repeated complaints from teachers. He is also unable to perform academic work at a pace comparable to other children of his age.

A developmental interview with his mother revealed delays in achieving early developmental milestones. He began walking at around 18 months of age. Delays in speech and language development were also reported—his first words were spoken at approximately 17 to 18 months of age.

Procedure: child was made comfortable by having a general conversation with the child before beginning the test.A detailed case history which included the child's demographic details, family history, education history, developmental history, history of psychological evaluation was noted. Any others information provided by parents was also noted.

Test environment: The test was administered in a quiet room in the school.The tool was administered and responses were recorded in a score sheet of the test.

Results and Discussion:

The aim of this study was to investigate the phonological awareness skills of a Hindi speaking child with mild intellectual disability.This study evaluated the performance of a child with mild intellectual disability across three different age groups tasks: 3 years 0 months to 3 years 11 months, 4 years 0 months to 4 years 11 months, and 5 years 0 months to 5 years 11 months. The child was assessed on a range of phonological and linguistic tasks, including rhyme generation, syllable segmentation, word manipulation, and sentence formulation. The performance in each task was scored, and the results from each age group provide insight into the child's developmental progress in relation to these language-related skills.

Table 1: Performance ofchild with mild intellectual disability under the 3 years 0 months to 3 years 11months age group tasks.

SL. No.	Tasks	Maximum Score	Obtained Score
1.	Rhyme Generation in Unfamiliar Poem (RG-UP)	2	2
	Total Scores	**2**	**2**

Table 2: Performance of child with mild intellectual disability under the 4 years 0 months to 4 years 11 months age group tasks.

SL. No.	Tasks	Maximum Score	Obtained Score
1.	Rhyme Discrimination (RD)	5	3
2.	Rhyme Oddity (RO)	3	2
3.	Rhyme Generation in Unfamiliar Poem (RG-	2	2

	UP)		
4.	Rhyme Word Generation (RWG)	5	4
5.	Syllable Blending (SB)	5	5
6.	Syllable Segmentation (SS)	5	4
	Total Scores	**25**	**20**

Table 3: Performance of child with mild intellectual disability under the 5 years 0 months to 5 years 11 months age group tasks.

SL. No.	Tasks	Maximum Score	Obtained Score
1.	Rhyme Discrimination (RD)	5	3
2.	Rhyme Oddity (RO)	3	2
3.	Rhyme Word Generation (RWG)	5	4
4.	Syllable Blending (SB)	5	5
5.	Syllable Segmentation (SS)	5	4
6.	Word Counting (WC) (No. of Words in a Sentence)	5	5
7.	Word Deletion (WD)	2	1
8.	Word Substitution (WSub)	2	1
9.	Word Switching in a Sentence (WSw)	2	1
	Total Scores	**34**	**26**

Results:

Table 1: Performance in the 3 years 0 months to 3 years 11 months age group tasks, In the 3 years to 3 years 11 months age group, the child was assessed using a single task, Rhyme Generation in Unfamiliar Poem (RG-UP). The child scored 2/2 on this task, indicating full mastery of rhyme generation in an unfamiliar context. This performance suggests that the child demonstrated the ability to recognize and generate rhymes, a foundational skill in early phonological awareness (Bishop, 2006).

Table 2: Performance in the 4 years 0 months to 4 years 11 months age group tasks, At 4 years to 4 years 11 months, the child completed a more comprehensive set of tasks, including Rhyme Discrimination (RD), Rhyme Oddity (RO), Rhyme Generation in Unfamiliar Poem (RG-UP), Rhyme Word Generation (RWG), Syllable Blending (SB), and Syllable Segmentation (SS). The total score in this group was 20/25, with the child performing well in Syllable Blending (SB) and Syllable Segmentation (SS), scoring 5/5 in both tasks. However, performance was weaker in tasks such as Rhyme Discrimination (RD) and Rhyme Oddity (RO), where the child scored 3/5 and 2/3, respectively. These lower scores suggest that, while the child could generate rhymes,

they struggled with tasks requiring the discrimination between rhyming and non-rhyming words (Snow, 2010). The development of phonological awareness is critical at this stage, as it is linked to later reading skills (Lonigan, 2006).

Table 3: Performance in the 5 years 0 months to 5 years 11 months age group tasks, In the 5 years to 5 years11months age group, the child completed a set of tasks that involved more advanced language skills: Word Counting (WC), Word Deletion (WD), Word Substitution (WSub), and Word Switching in a Sentence (WSw). The total score was 26/34, with the child achieving perfect scores in Word Counting (WC) (5/5) and Syllable Blending (SB) (5/5). However, the child's performance on tasks like Word Deletion (WD), Word Substitution (WSub), and Word Switching in a Sentence (WSw) was lower (1/2 on each). These tasks require a deeper understanding of sentence structure and word manipulation, areas where the child showed room for improvement.

Discussion

The results suggest that the child demonstrates a steady progression in phonological and linguistic abilities, although there are notable areas for further development. In the early years (3 years to 3 years 11 months), the child excelled in tasks related to rhyme generation, which is consistent with findings that rhyme recognition and generation are key milestones in early language development (Bishop, 2006). However, as the tasks became more complex, especially in the 4 years to 4 years 11 months and 5 years to 5 years 11 months age groups, the child encountered difficulties, particularly in tasks requiring flexibility with language (e.g., word substitution and switching).

The child's strong performance in syllable segmentation and blending (5/5 in both tasks across age groups) is noteworthy, as these are critical components of phonological awareness, which has been shown to be a predictor of later reading success (Lonigan, 2006). The child's ability to blend and segment syllables efficiently aligns with research that highlights the importance of these skills in early literacy development (Snow, 2010).

However, the lower scores in tasks like Word Deletion, Word Substitution, and Word Switching in a Sentence suggest challenges in higher-order language processing. These tasks require not only a basic understanding of word sounds but also an ability to manipulate words within sentences, a skill that develops later and may need targeted intervention (Gathercole & Baddeley, 1990). The lower performance on these tasks indicates that the child may benefit from additional support in these areas, particularly as they relate to understanding more complex sentence structures and syntax.

The child's total scores across age groups suggest that with appropriate interventions focusing on language manipulation and syntactic flexibility, the child could continue to make progress in these areas. Language intervention programs, especially those emphasizing word manipulation, sentence construction, and phonological awareness, could help the child build on their strengths and address the areas of difficulty identified in this assessment (Catts, 2009).

Conclusion:

In conclusion, the results of this study highlight both strengths and challenges in the language development of a child with mild intellectual disability. While foundational phonological skills such as rhyme generation and syllable manipulation are progressing well, more advanced tasks involving word manipulation and sentence structure may require additional focus to ensure the child's continued linguistic development.

References:

- Burt, L., Holm, A. and Dodd, B. (1999) 'Phonological awareness skills of 4-year-old British children: an assessment and developmental data', International Journal of Language and Communication Disorders 34 (3): 311-335.
- McHugh, M. L. (2012). Interrater reliability: The kappa statistic. Biochemia Medica, 22(3): 276-282.
- Melby-Lervåg, M. (2012). The relative predictive contribution and causal role of phoneme awareness, rhyme awareness, and verbal short-term memory in reading skills: A review. Scandinavian Journal of Educational Research, 56: 363-380. http://dx.doi.org/10 .1080/00313831.2011.621215.
- Mesmer, H. A. E., & Williams, T. O. (2015). Examining the role of syllable awareness in a model of concept of word: Findings from preschoolers. Reading Research Quarterly, 50(4): 483-497.
- Rawat and Kiran (2023), Development of phonological awareness test, Journal of The All India Institute of Speech and Hearing - Volume 42, Issue 1, January-December, 68-76.
- Nag, S., Caravolas, M., &Snowling, M. J. (2011). Beyond alphabetic processes: Literacy and its acquisition in the alphasyllabic languages. Reading and Writing, 24: 615-622.
- Rao, C., TA, S., Midha, R., Oberoi, G., Kar, B., Khan, M., Singh, N. C. (2021). Development and standardization of the DALI-DAB (dyslexia assessment for languages of India–dyslexia assessment battery). Annals of Dyslexia, 71(3): 439-457.

- SermierDessemontet, R., & de Chambrier, A. F. (2015). The role of phonological awareness and letter-sound knowledge in the reading development of children with intellectual disabilities. Research in developmental disabilities, 41-42, 1–12. https://doi.org/10.1016/j.ridd.2015.04.001
- SermierDessemontet, R., de Chambrier, A. F., Martinet, C., Moser, U., & Bayer, N. (2017). Exploring Phonological Awareness Skills in Children With Intellectual Disability. American journal on intellectual and developmental disabilities, 122(6), 476–491. https://doi.org/10.1352/1944-7558-122.6.476
- Mott, M.S., Rutherford, A.S., Williams-Black, T. (2013). Assessment of Phonological Awareness (2nd ed.). Pearson Learning Solutions
- Allor, J. H. (2002). The relationships of phonemic awareness and rapid naming to reading development. Learning Disability Quarterly, 25, 47-57.
- Alvarez, A., Carvalho, I.A.M., & Caetano, A.L. (2004). Profile of phonological skills. 2nd ed. São Paulo: Via Lettera; 2004.
- Armbruster, B.B., Lehr, F., Osborn, J., & Adler, C.R. (2003). Put reading first: The research building blocks for teaching children to read: Kindergarten through grade 3 (2nd ed.). http://www.teachingasleadership.org/
- Anthony, J. L., & Lonigan, C. J. (2004). The nature of phonological awareness: Converging evidence from four studies of preschool and early grade school children. Journal of Educational Psychology, 96 (1), 43-55.
- Bishop, D. V. M. (2006).Developmental dyslexia: Diagnosis and intervention. Journal of Child Psychology and Psychiatry, 47(6), 574–594.
- Catts, H. W. (2009).The relationship between speech-language impairment and reading disabilities. Learning Disabilities Research & Practice, 24(1), 35-43.
- Gathercole, S. E., & Baddeley, A. D. (1990*)*. Working memory and language. Hove, UK: Lawrence Erlbaum.
- Lonigan, C. J. (2006). Developmental predictors of early reading skills: The relative contributions of phonological sensitivity, letter knowledge, and oral language skills. In R. M. Joshi & P. G. Aaron (Eds.),Handbook of orthography and literacy(pp. 295–313). Mahwah, NJ: Lawrence Erlbaum.
- Snow, C. E. (2010). Academic language and the challenge of reading for learning about science. Science, 328(5977), 450-452.