A Study on Prevalence of Speech and Language Disorders in Children with Intellectual Disability in Bankura District of West Bengal

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Abstract: Communication difficulties can lead to social isolation, frustration, and diminished self-esteem in children with ID. Understanding the background of these challenges is essential for promoting their social and emotional well-being. Early identification and intervention are critical for children with speech and language disorders. Recognizing the prevalence of these disorders in the context of ID can lead to earlier support and improved outcomes. Thus, the study aims to provide a comprehensive overview of the prevalence of speech and language disorders in children with intellectual disability. It will delve into the existing research, examining the factors contributing to this co-occurrence and its implications for affected children. The sample of study comprised 45 children with intellectual disability among them 30 boys and 15 girls from the special schools for intellectual disability of Bankura district. There were 14 children with mild intellectual disability and 31 children with moderate intellectual disability. In conclusion, the study on the prevalence of Speech and Language Disorders in children with Intellectual Disability in Bankura District highlights the significance of these conditions in the region. It emphasizes the importance of early identification and comprehensive intervention to improve the quality of life for affected children. Further research and public health efforts are warranted to better understand and address the complex factors associated with these co-occurring conditions.

Keywords: Speech and Language Disorders, Intellectual Disability, Gender, Level, Intervention Strategies

1. Introduction

Communication is nothing but exchange of information. Language is the medium of communication and in some form it is the integrally associated with our physical emotional, social, educational and vocational needs. It is one of the important domains of children’s overall development and without language makes child dependent. According to Henry Sweet an English phonetician and language scholar, “Language is the expression of ideas by means of speech sounds combined into words. Words are combined into sentences, this combination answering to that of ideas into thoughts. Speech and language is a common code shared and understood by the people in a community and which children learn through social interactions (kumin - 2003). Language are two types, receptive language & expressive language. Language development in children is a complex, dynamic and multi dimensional process. Vaidyan then -1995 children learn and develop new language skills step by step. Good language skills are one of the main preconditions for success in the schools. Good communication depends upon the four parameter of speech (ISHA - 1990). Speech and language are fundamental tools for human communication and interaction, playing a pivotal role in a child's development. However, for some children, the acquisition and mastery of speech and language skills can be a complex journey, particularly when they co-occur with intellectual disability (ID). Intellectual disability is a condition characterized by significant limitations in intellectual functioning and adaptive behaviors, and it often manifests during the developmental stages of childhood. When children with ID also struggle with speech and language disorders, the challenges they face can be profound, affecting their ability to express themselves, engage with others, and navigate their daily lives. Understanding the prevalence of speech and language disorders in children with intellectual disability is vital for multiple reasons. It sheds light on the co-occurrence of these conditions, highlighting the intricate relationship between cognitive and comminucative development. It also informs clinicians, educators, and families about the unique needs of this population, guiding the design of targeted interventions and support systems. Moreover, recognizing the prevalence of speech and language disorders in children with ID underscores the significance of early identification and intervention, as timely assistance can significantly enhance a child's overall quality of life and future prospects. This comprehensive exploration aims to delve into the prevalence of speech and language disorders in children with intellectual disability. It will delve into the contributing factors, including genetic and environmental influences that make these disorders more common in this population. Furthermore, it will examine the implications of co-occurring speech and language disorders within the context of intellectual disability, exploring the multifaceted challenges faced by affected children and their families. Finally, the study will underscore the critical role of intervention strategies in mitigating the impact of these co-occurring conditions, ultimately promoting improved outcomes and better prospects for children with intellectual disability.
1.1. Background of the Study

Speech and language disorders are a common concern in pediatric healthcare and educational settings, affecting a significant portion of the child population. These disorders encompass a wide range of communication difficulties, including speech sound disorders (e.g., articulation and phonological disorders), language disorders (e.g., expressive and receptive language impairments), fluency disorders (e.g., stuttering), and pragmatic language difficulties (e.g., challenges in social communication). In parallel, intellectual disability (ID) is another prevalent condition among children, characterized by limitations in intellectual functioning and adaptive behaviors. The co-occurrence of speech and language disorders with ID is a well-recognized phenomenon, and it presents unique challenges in terms of assessment, intervention, and overall quality of life for affected children and their families. The co-occurrence of speech and language disorders with ID adds a layer of complexity to the challenges faced by children and their caregivers. These children may experience difficulties in multiple domains, affecting their academic, social, and emotional development. The severity of speech and language disorders in children with ID can vary widely, from mild to severe. This variability underscores the need for tailored interventions that address the specific needs of each child. Speech and language skills are foundational for academic success. Children with both ID and speech and language disorders may struggle more in school, requiring specialized educational support and accommodations. Communication difficulties can lead to social isolation, frustration, and diminished self-esteem in children with ID. Understanding the background of these challenges is essential for promoting their social and emotional well-being. Early identification and intervention are critical for children with speech and language disorders. Recognizing the prevalence of these disorders in the context of ID can lead to earlier support and improved outcomes. Thus the study aims to provide a comprehensive overview of the prevalence of speech and language disorders in children with intellectual disability. It will delve into the existing research, examining the factors contributing to this co-occurrence and its implications for affected children. By understanding the background of this complex issue, we can develop more effective strategies to identify, support, and improve the lives of children with intellectual disability and speech and language disorders.

1.2. Statement of the Problem

Children with intellectual disabilities face a unique set of challenges in their cognitive and communicative development. While research has explored the prevalence of speech and language disorders in the general pediatric population, there is a notable gap in our understanding of the extent and nature of these disorders specifically within the subset of children who also have intellectual disabilities. This study aims to investigate the prevalence of speech and language disorders in this vulnerable population and explore potential factors contributing to these disorders. By addressing this gap in the literature, we can better inform diagnostic and therapeutic interventions tailored to the needs of children with intellectual disabilities, ultimately improving their overall quality of life and prospects for future success. Thus the study entitled as “A Study on Prevalence of Speech and Language Disorders in Children with Intellectual Disability in Bankura District of West Bengal.”

1.3. The Objectives of the Study

1) To assess the prevalence causes of speech and language disorders (SLD) in children with intellectual disability.
2) To find out the prevalence of speech and language disorders (SLD) in children with intellectual disability in respect of gender.
3) To find out the levels of prevalence of speech and language disorders (SLD) in children with intellectual disability.
4) To explore the intervention strategies for supporting the speech and language disorders (SLD) in children with intellectual disability.

1.4. The Hypothesis of the Study

Ho: There is no significant association between the causes of speech and language disorders (SLD) and intellectual disability in children.
H1: The prevalence of speech and language disorders (SLD) in children with intellectual disability is the same for both genders.
H2: There are no significant differences in the levels of prevalence of speech and language disorders (SLD) in children with intellectual disability across age groups.
H3: The existing intervention strategies for supporting speech and language disorders (SLD) in children with intellectual disability are equally effective across all cases.

1.5. Delimitation

The research was delimited with respect to method, tools and sample, 45 intellectual disable children were selected as sample of study. The study was confined to the Speech and Language Disorders in Children with Intellectual Disability. The zone of study was Bankura district.

2. Review of Related Literature

Georgan, W. C., Archibald, L. M., & Hogan, T. P. (2023). Speech/Language Impairment or Specific Learning Disability? Examining the Usage of Educational Categories. Journal of Speech, Language, and Hearing Research, 66 (2), 656 - 667. A trend in which younger students tend to be identified with the S/LI category, whereas older students tend to be identified with the SLD category. This trend is evident in all 6 years of data analyzed at the national level, and in 49 of 50 states.

Langbecker, D., Snoswell, C. L., Smith, A. C., Verboom, J., & Caffery, L. J. (2020). Long - term effects of childhood speech and language disorders: A scoping review. South African Journal of Childhood Education, 10 (1), 1 - 13. Fifty - one studies met the inclusion criteria. These studies reported mixed results, the most common of which were suboptimal mental health, social and academic outcomes for persons with a history of speech or language
disorders. We found an association between childhood speech or language disorders and psychiatric disability, behavioural problems, lower socio-economic status, relationship and living difficulties, and lower academic achievement compared to the general population.

García - Mateos, M., Mateos, L. M. F., & De Santiago Herrero, J. (2015). PREVALENCE OF SPEECH AND LANGUAGE DISORDERS: IDENTIFY AND OUTCOME AT THE LEARNING DISABILITIES. Journal of Communications Research, 7 (1). The study demonstrate that knowledge of the prevalence of linguistic difficulties during early childhood can facilitate the early detection and prevention of LD in the student population. This is due to the fact that the majority of language and communication problems will appear in the classroom environment, which incorporates the demands and implications of the teaching and learning process.


Memisevic, H., & Hadzic, S. (2013). Speech and language disorders in children with intellectual disability in Bosnia and Herzegovina. Disability, CBR & Inclusive Development, 24 (2), 92 - 99. It was demonstrated that the total prevalence of SLD in this sample was high (71.3%). While there were no statistical differences in the prevalence of SLD in relation to the sex of the child, there were significant differences in relation to the level and etiology of intellectual disability.

2.1. Research Gap

None of the above studies have conducted research on A Study on Prevalence of Speech and Language Disorders in Children with Intellectual Disability in Bankura District of West Bengal. Therefore this is the gap of present study.

3. Methodology of Study

Investigator used descriptive survey method. It gives a snapshot of the state of the art in research and is thus seen as a promising educational strategy. It requires reasoning about issues in education by using tools like interpretation, comparison, measurement, categorization, assessment, and generalization to get to the bottom of things. The focus of the descriptive technique is on the present and the connection between variables, such as circumstances, events, and practices.

3.1. Sample of Study

The sample of study comprised 45 children with intellectual disability among them 30 boys and 15 girls from the special schools for intellectual disability of Bankura district. There were 14 children with mild intellectual disability and 31 children with moderate intellectual disability.

3.2. Tools

Investigator used children’s psycho - educational records for the presence of speech and language disorders. SLDs were than independently validated by a speech and language therapist. All SLDs were regarded as a single disorder. Children with severe and profound intellectual disability were not included in this study as all of them have speech and language disorders.

4. Analysis and Interpretation of Data

H0: There is no significant association between the causes of speech and language disorders (SLD) and intellectual disability in children.

<table>
<thead>
<tr>
<th>Causes</th>
<th>Present</th>
<th>Absent</th>
<th>Total</th>
<th>X²&amp;P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unknown Cause</td>
<td>14 (31.1%)</td>
<td>2 (4.4%)</td>
<td>17 (37%)</td>
<td>32.536 .000</td>
</tr>
<tr>
<td>Down Syndrome</td>
<td>9 (20%)</td>
<td>2 (4.4%)</td>
<td>11 (24.4%)</td>
<td></td>
</tr>
<tr>
<td>Organic Brain Injury</td>
<td>7 (15.5%)</td>
<td>1 (2.2%)</td>
<td>11 (24.4%)</td>
<td></td>
</tr>
<tr>
<td>Birth Asphyseia</td>
<td>5 (15.5%)</td>
<td>1 (2.2%)</td>
<td>8 (17.7%)</td>
<td></td>
</tr>
<tr>
<td>Other Genetic Causes</td>
<td>3 (6.66%)</td>
<td>1 (2.2%)</td>
<td>8 (17.7%)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>38 (84%)</td>
<td>7 (15.5%)</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>
Table 4.1 and figure 4.1 present data on the causes of Speech and Language Disorders (SLD) and Intellectual Disability in children, categorized as "Present" and "Absent." The unknown causes of category represent the largest percentage of cases (37% of the total). In 31.1% of cases, the cause of SLD and Intellectual Disability is unknown, while in only 4.4% of cases, the condition is not associated with an unknown cause. Down syndrome is the second most common cause, accounting for 24.4% of the total cases. In 20% of cases, Down syndrome is present as a cause, while in 4.4% of cases, it is not associated with this condition. Birth Asphyxia accounts for 17.7% of the total cases. In 15.5% of cases, it is present as a cause, while in 2.2% of cases, it is not associated with SLD and Intellectual Disability. Other Genetic Causes represent 17.7% of the total cases. In 6.66% of cases, these causes are present, while in 2.2% of cases, they are not associated with the condition.

Here are some reasons why such an association existed in the investigation:

**Common Underlying Factors:** It's possible that there are common underlying factors or risk factors that contribute to both speech and language disorders and intellectual disability. These factors could include genetic predispositions, prenatal conditions, or environmental influences that affect both speech and cognitive development.

**Biological Links:** Some causes, such as Down syndrome or Organic Brain Injury, have well-established biological mechanisms that can impact both speech/language abilities and cognitive development. For example, Down syndrome is caused by an extra chromosome 21, which can affect brain development and speech abilities.

**Developmental Interactions:** Speech and language development is closely intertwined with cognitive and intellectual development in children. Delays or disorders in one area can impact the development of the other. For example, if a child has difficulty with language processing, it may also affect their ability to learn and reason, contributing to intellectual disability.

Overall, the Chi - squared test value is 32.536 and it is significant which indicates that there are significant association between an unknown cause and the presence of SLD and Intellectual Disability in children. This finding may be important for further research and understanding the underlying factors contributing to these conditions. However, it's important to consider other potential factors not included in this table that could also influence the occurrence of these disorders.

**H0:** The prevalence of speech and language disorders (SLD) in children with intellectual disability is the same for both genders.

<table>
<thead>
<tr>
<th>Table 4.2: The Prevalence of Speech and Language Disorders (SLD) in Children with Intellectual Disability Based on Genders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td>Boys</td>
</tr>
<tr>
<td>Girls</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>
The table 4.2 and figure 4.2 provides data on the prevalence of Speech and Language Disorders (SLD) in children with Intellectual Disability, categorized by gender (Boys and Girls). It also includes a significance value (Sig Value), which likely indicates the result of a statistical test, such as a Chi - squared test or Fisher's exact test, assessing the association between genders and the presence or absence of SLD in children with Intellectual Disability.

**Boys:** Among the boys with Intellectual Disability, 48.8% (22 out of 30) have Speech and Language Disorders (SLD), while 17.77% (8 out of 30) do not have SLD. The Sig Value of 0.000 suggests a highly significant association between gender (boys) and the presence of SLD. In other words, there is a strong statistical relationship indicating that boys with Intellectual Disability are more likely to have SLD compared to not having it.

**Girls:** Among the girls with Intellectual Disability, 26.6% (12 out of 15) have SLD, while 6.66% (3 out of 15) do not have SLD. Similar to boys, the Sig Value of 0.000 indicates a highly significant association between gender (girls) and the presence of SLD. This suggests that girls with Intellectual Disability are also statistically more likely to have SLD than not to have it.

**Total:** When considering both boys and girls together, 75.5% (34 out of 45) of children with Intellectual Disability have SLD, and 24.4% (11 out of 45) do not have SLD. The total sample size is 45.

In summary, the table demonstrates a strong statistical association between gender and the presence of Speech and Language Disorders (SLD) in children with Intellectual Disability. Both boys and girls with Intellectual Disability are significantly more likely to have SLD compared to not having it.

The prevalence of Speech and Language Disorders (SLD) in children with Intellectual Disability based on genders exists due to a combination of biological, genetic, and environmental factors, as well as potential differences in the way boys and girls develop and present with these conditions. Here are some key factors that contribute to this prevalence:

**Biological Differences:** Boys and girls may have different biological factors that influence the development of both Intellectual Disability (ID) and Speech and Language Disorders (SLD). These biological differences can include hormonal variations, brain development, and genetic factors.

**Genetic Predisposition:** Some genetic conditions that lead to Intellectual Disability may also affect speech and language development. For example, certain genetic syndromes are more common in one gender than the other and may be associated with both Intellectual Disability and SLD.

**Hormonal and Neurological Factors:** Differences in hormonal levels and brain development between boys and girls can influence speech and language development. Hormones can affect brain organization, which in turn can influence language processing and communication skills.

**Social and Environmental Factors:** Social and environmental factors, including societal expectations and cultural influences, may play a role in the prevalence of SLD in boys and girls with Intellectual Disability. These factors can affect the likelihood of early identification and intervention for SLD. Intellectual Disability and SLD often interact and influence each other. Differences in the prevalence of Intellectual Disability in boys and girls may also influence the likelihood of SLD being identified and diagnosed.

**Ho:** There are no significant differences in the levels of prevalence of speech and language disorders (SLD) in children with intellectual disability based on levels of disability.

**Table 4.3:** The Prevalence of Speech and Language Disorders (SLD) in Children with Intellectual Disability based on Levels of Disability

<table>
<thead>
<tr>
<th>Level of Disability</th>
<th>Speech Language Disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td></td>
</tr>
<tr>
<td>Level 2</td>
<td></td>
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<tr>
<td>Level 3</td>
<td></td>
</tr>
</tbody>
</table>
with Mild Intellectual Disability, 57.14% (8 out of 14) have Speech and Language Disorders (SLD), while 42.85% (6 out of 14) do not have SLD. The Sig. Value of .000 suggests a highly significant association between the level of intellectual disability (mild) and the presence of SLD. In other words, there is a strong statistical relationship indicating that children with Mild Intellectual Disability are more likely to have SLD compared to not having it. Among children with Moderate Intellectual Disability, 93.54% (29 out of 31) have SLD, while only 6.45% (2 out of 31) do not have SLD. Similar to the mild group, the Sig. Value of .000 indicates a highly significant association between the level of intellectual disability (moderate) and the presence of SLD. This suggests that children with Moderate Intellectual Disability are also statistically much more likely to have SLD compared to not having it. When considering both levels of intellectual disability together, 82% (37 out of 45) of children with Intellectual Disability have SLD, while 17.77% (8 out of 45) do not have SLD. The total sample size is 45. Thus the above table demonstrates a strong statistical association between the level of intellectual disability (mild or moderate) and the presence of Speech and Language Disorders (SLD) in children with Intellectual Disability. Both children with Mild and Moderate Intellectual Disability are significantly more likely to have SLD compared to not having it. This information can be important for understanding how the severity of intellectual disability is related to the likelihood of co- occurring SLD and may have implications for diagnosis and intervention strategies.

**Ho:** The existing intervention strategies for supporting speech and language disorders (SLD) in children with intellectual disability are equally related across all cases.

**Table 4.4:** The Existing Intervention Strategies for Supporting Speech and Language Disorders (SLD) in Children with Intellectual Disability are equally related to all Cases

<table>
<thead>
<tr>
<th>Intervention strategies</th>
<th>Supporting SLD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>0.959</td>
</tr>
<tr>
<td>Sig. Value</td>
<td>.000**</td>
</tr>
</tbody>
</table>

Table 4.4 appears to show the correlations between different intervention strategies for supporting Speech and Language Disorders (SLD) in children with Intellectual Disability. The Pearson correlation coefficient measures the strength and direction of the linear relationship between two variables. In this table, it is used to assess the relationship between different intervention strategies for supporting SLD in children with Intellectual Disability. The diagonal entries in the table (1.0) represent the correlation of each strategy with itself, which is always perfect and equal to 1.0. The off-diagonal entries (.959) indicate a very high positive correlation between the different intervention strategies for supporting SLD. A correlation coefficient close to 1.0 suggests a strong positive linear relationship, meaning that when one intervention strategy is used, the likelihood of the other strategy being used is also very high. The significance value (Sig. Value) of .000 is very low, typically indicating that the observed correlation is statistically significant. In this case, it means that the high positive correlation between the intervention strategies is not likely due to random chance but is a real and meaningful relationship. In summary, the table suggests that the various intervention strategies for supporting Speech and Language Disorders (SLD) in children with Intellectual Disability are highly and positively correlated. This implies that when one intervention strategy is applied, it is very likely that the other strategies are also being used in a coordinated or complementary manner. This information is valuable for understanding how intervention approaches are related and can help professionals in the field design more effective and comprehensive intervention plans for children with these co- occurring conditions.

**5. Findings**

Based on the study conducted on the prevalence of Speech and Language Disorders (SLD) in children with Intellectual Disability.
Disability in Bankura District of West Bengal, the following conclusions can be drawn:

**Prevalence of SLD and Intellectual Disability:** The study found a significant prevalence of Speech and Language Disorders in children with Intellectual Disability in Bankura District. This indicates that a considerable number of children in the region are affected by these co-occurring conditions.

**Gender - Based Differences:** The study reveals gender-based differences in the prevalence of SLD in children with Intellectual Disability. These differences suggest that boys and girls may have varying rates of SLD, which could be influenced by biological, genetic, and social factors.

**Severity Matters:** The level of intellectual disability, whether mild or moderate, is strongly associated with the presence of SLD. Children with Moderate Intellectual Disability are significantly more likely to have SLD compared to those with Mild Intellectual Disability.

**Diagnostic Awareness and Intervention:** The study highlights the importance of early diagnosis and intervention for children with Intellectual Disability and SLD. Identifying and addressing these conditions at an early age can significantly improve a child's communication and cognitive development.

**Need for Comprehensive Intervention:** The high correlation among different intervention strategies suggests that a comprehensive approach to intervention is prevalent in the region. This is a positive finding as it indicates that professionals and caregivers are adopting a holistic approach to support children with SLD and Intellectual Disability.

**Further Research:** While the study provides valuable insights into the prevalence and association of SLD and Intellectual Disability in Bankura District, further research is needed to understand the underlying factors contributing to these conditions, including genetic, environmental, and cultural factors.

**Public Health Implications:** The prevalence of SLD and Intellectual Disability underscores the need for increased awareness, resources, and support for affected children and their families. Public health initiatives and educational programs should be designed to address the specific needs of this population.

In conclusion, the study on the prevalence of Speech and Language Disorders in children with Intellectual Disability in Bankura District highlights the significance of these conditions in the region. It emphasizes the importance of early identification and comprehensive intervention to improve the quality of life for affected children. Further research and public health efforts are warranted to better understand and address the complex factors associated with these co-occurring conditions.

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**References**


