

Effects of Parental Sign Language on Academic Achievements of Children with HI in Inclusive classroom

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Abstract

This study was aimed to find out the level of parental expertise in sign language and its role for academic achievements of children with HI (HI). The study was descriptive in nature. The participants of this study were 100 children with HI and their hearing parents. These children were studying at secondary and higher secondary schools which providing inclusive education. The data was collected through a questionnaire named as, 'Questionnaire on Parental Sign Language for Expertise' (QPSLE) and 'Academic Records' of children with HI. The google forms were used to collect data from different parts of country. On the bases of findings it was concluded that there are three categories of parental level of expertise, i.e. Expert, to some extent Expert and not Expert. Results indicates the significant impact of parental sign language on academic achievements of children with HI.

Keywords: parental sign language, academic achievements, hearing parents of children with HI, inclusive classroom.

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Introduction

The first teacher in the life of a child are their parents. They remain their best teacher throughout the life. The learning experiences of children are based on parental interactions. Roy & Giraldo-García (2018) explained that various developmental growths like physical, social, emotional and intellectual growths of children are highly influenced by parental interaction. Calderon (2012) found that parent participation in children's school education programs is an important positive predictor of early learning for a significant change in student achievement.

The same conclusion was drawn by Đurišić, and Bunijevac (2017) that the amount of parental involvement determines the several factors for achievement of children in their academics like an increase rate of student success, greater amount of parent and teacher satisfaction, and better school climate. Parental involvement is also an important factor for children with HI. Only parents are able to understand their needs in spite of everything else. But it is also a bitter reality that most of the parents are not aware of raising their child with true spirit.

Marschark, Shaver, Nagle and Newman (2015) explained that 96% of population of deaf babies have hearing parents who are not informed about their deafness in the beginning, so they are not prepared to raise their deaf child. From these, 72% parents have no mastery in sign language (GRI, 2011 cited in Lenihan, Voss, White, & Salvucci, 2020). Thus, children with HI in general are academically at risk. Sign language is an important and significant mode of communication for children with HI with the rest of the world. Humphries, Kushalnagar, Mathur, Napoli, Rathmann and Smith (2019) results from studies that recommended that the parents should be more engaged and involved with their children with HI for making a sign language community. Poor sign language skills of parents becomes a reason of communication gap between parents and children. Humphries, et al., (2019) also reported that the communication gap between parent and children is one of the problems for both because something was not fully explained. Weisel and Kamara (2005) reported that the poor communication skills of hearing parents of children with HI may become a reason for insecure relationship between them.

The parental interactions are also considered parents as the first teacher and closest individuals to interact with the child (Cordry & Wilson,

2004). Therefore, parents need to master in sign language so that the meaningful information can be passed on to the children with HI. Parental support and guidance are always needed for children with HI in their daily activities including their communication needs. Parental support is also required to children with HI in their academic activities like other children. For this, parents should spend more time with their children in various activities such as reading or talking. Such activities may create a positive impact in different areas of development of these children (Akellot & Bangirana, 2019). Thus, learning sign language skills is necessary for parents of children with HI. Various research pointed out the difficulties for the parents of children with HI facing in learning sign language skills being their second language (Humphries, et.al., 2019; Ali, Braithwaite, Dhanoolal, & Snoddon, 2021). This makes it difficult for children with HI to interact with their parents as well as other people who are unable to understand sign language. It develops a gap between parents and their children with HI. Furthermore, Parents often feel frustrated, angry and dissatisfied when they are unable to express their feelings and understand their conversations due to this gap. The parental frustration and emotional instability creates negative influence on children with HI and negatively affects the development of cognitive, intellectual, emotional, social and behavioural areas of these children (Quittner, A. L., Barker, D. H., Cruz, I., Snell, C., Grimley, M. E., Botteri, M., & CDaCI Investigative Team., 2010). Moreover, parental poor communication skills causes psychological problems in children with HI (McCullough & Duchesneau, 2016).

Academic difficulty is another challenge for children with HI. The poor command of sign language leads towards the academic difficulties in children with HI while studying in inclusive classroom (Ngobeni, Maimane, & Rankhumise, 2020). It happens due to poor sign language skills in hearing parents (Kimbly, 2019). Lack of parental sign language become a reason of poor focus in children with HI while interacting with their parents (Lieberman, Hatrak & Mayberry, 2014). Parents may help them to understand the hearing world by using sign language especially in an inclusive classroom.

Sign language is a source for transmission of information through movements of hands, lips and body gestures. Sign language is a major source to facilitate deaf community in their daily affairs being a communication mode (Sidig, Luqman, Mahmoud, & Mohandes, 2021). Communication disruption is caused a lack of interaction (Rose & Conama, 2018) and

expression of thoughts which is necessary for daily family functioning (Humphries, Mathur, Napoli, Padden, & Rathmann, 2022).

The current study was designed to identify the impact of different levels of parental sign language for the academic achievements of children with HI studying in inclusive education. The daily interactions of these children with hearing world are based on sign language. These children used it for daily interactions and sharing of information with each other (Koptseva, Liia & Kirko 2015). The learning of sign language is essential for these children and their parents as early as possible. Learning of sign language (being an only mode of communication) for hearing parents is difficult but important to comprehend the information between their children with HI and them (Ali, Braithwaite, Dhanoolal, & Snoddon, 2021). Parental sign language proficiency becomes a reason for better parental involvement as well as improved academic activities and social life of children with HI (Marippan, & Yasin, 2020). Thus, the importance of sign language skills for hearing parents can be seen in terms of better communications and guidance for children with HI in their life activities. It also help them to perform better in inclusive classroom.

Objectives of the Study

The study was aimed as follows:

- i. To find out the parental level of sign language while communicating with their children with HI.
- ii. To analyze the role of parental sign language for academic achievements of children with HI.

Research Questions

These were the research questions of the current study:

1. What is the parental level of sign language in communicating with their CWHI?
2. What is the effect of parental sign language on academic achievements of CWHI studying in inclusive classroom?
3. How does the parental level of sign language affect the educational achievements of CWHI?

Research Methodology

The current study was descriptive in nature. It was conducted to study the role of different levels of sign language expertise and their impact on academic achievement of children with HI. For this, 100 students with HI who were studying in inclusive education at secondary and higher secondary school levels randomly selected. Only those children were participated who have hearing parents.

Instrumentation

The present study was conducted by using following research tools.

- i. *Questionnaire on Parental Sign Language for Expertise (QPSLE)*
A questionnaire was developed for parents to establish the different levels of parental sign language in the present research. It was developed on Likert type scale (five point). The questionnaire was based on five response categories from strongly disagree to strongly agree in 20 items. The name of developed questionnaire was, "Questionnaire on Parental Sign Language for Expertise' (QPSLE). It was developed to find out the level of parental sign language which were expert level, to some-extent expert level and not expert level. For development of questionnaire following sources were used; a) Literature review, b) Teachers, c) Parents, d) Supervisor.
The judgmental approach was used to examine the content validity of QPSLE. For this, a questionnaire was given to experts in the field to judge the item. These experts helped to determine the content validity and construct validity of the tool. The internal consistency of the measurement was examined on SPSS. The Cronbach's alpha value was 0.90.
- ii. *Academic Record*
The student's academic records were taken from the different schools of special education from secondary higher secondary level of students. The purpose of the academic records was to find the impact of parental sign language on academic achievements of children with HI. The data was collected by using questionnaires in google forms.

Results

Table 1
Frequencies and percentages for Levels of expertise

<i>Levels of expertise</i>	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>
to some extent expert	82	82.0	82.0
not expert	04	4.0	4.0
Expert	14	14.0	14.0
Total	100	100.0	100

Table1 indicates that the descriptive analysis showed that only 14 parents (14%) were found by sign language experts. Whereas 82 parents (82%) where to some extent sign language experts and only 04 parents (4%) has no expertise in sign language.

Table.2
Mean and standard deviation (parental sign language expertise)

<i>Levels of expertise</i>	<i>N</i>	<i>Mean</i>	<i>S. D</i>	<i>Std. Error</i>
no expertise	04	69.00	9.31	4.66
to some extent expert	82	44.57	4.89	0.54
Expert	14	82.00	2.48	0.66
Total	100	50.79	14.36	1.44

Table 4.2 indicates that the means of 14 parents who were experts in sign language was 82.00. Whereas the mean of 82 parents who have to some extent expertise in sign language was 44.57 and the mean of 04 parents who has no expertise in sign language 69.00. There were significant variations found among experts, to some extent experts, and no expertise in sign language on the academic achievements of children with HI in inclusive classroom.

Table.3*ANOVA for parental sign language expertise and academic achievements*

	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>p</i>
Between Groups	18132.53	2	9066.27	385.70	.000
Within Groups	2280.06	97	23.51		
Total	20412.59	99			

Table.3 indicates that there was a significant role of parental sign language on the academic achievement of children with HI. In order to observe the difference between two variables, an ANOVA was conducted. There was statistically significant difference found between groups as demonstrated by one-way ANOVA ($F(2, 97) = 385.70, p = .00$). Thus, the significant effect was observed of parental sign language on the academic achievements of children with HI in inclusive classroom. In order to compare the effect level of different expertise of parental sign language a multiple comparison was conducted by applying post hoc LSD in table 4.

Table. 4*Multiple Comparisons*

<i>Dependent Variable: Academic Achievement</i>					
	(I) levels of expertise	(J) levels of expertise	Mean Difference (I-J)	Std. Error	Sig.
LSD	Not Expert	to some extent expert	24.43	2.48	.000
		expert	-13.00	2.75	.000
	Expert	to some extent expert	37.43	1.40	.000

Table. 4 indicates multiple comparisons by applying LSD in Post Hoc between different levels of expertise with academic achievement. The significant difference was observed in level of expertise, like not expert with to some extent expert and expert; and expert with to some extent expert. From these, the comparison between expert and to some extent expert have greater significant difference (37.43, $p=.000$). It shows a

greater effect of parental sign language (who were expert in it) on academic achievement of children with HI.

Discussion

Language is a source of expression of thoughts and ideas. People normally communicate with each other by using any language as a medium. But in deaf community, the only mode of communication is sign language. It connects the deaf community with whole world as well as with their parents. Thus parental sign language is an essential component to eliminate communication barriers for the parents to communicate with their children with HI.

Parental sign language is an essential part in the family life of children with HI. Thus, it is recommended for hearing parents to enhance the communication with children with HI (Humphries, et.al., 2019). Parents especially mother is more close to their children. Maternal sign language skills is a robust predictor of language, reading, social and emotional development of children with HI (Calderon, 2000). This study was aim to explore the role of various levels of parental sign language expertise for academic achievements of children with HI. For this, secondary and higher secondary school children with HI along with their hearing parents were participated in the study. The results of current study indicates significant influence of different levels of parental sign language expertise on academic achievements of these children. These results are similar as indicated in different studies like; the significant positive effect of parental sign language on academic achievements of children with HI (Geers, Mitchell, Warner-Czyz, Wang, & Eisenberg, 2017). There are several factors like parental level of education, parental involvement and interaction with deaf culture (Akellot, & Bangirana, 2019; Kimbley, 2019), low socio-economic status (Macaulay & Ford, 2013), early intervention or early exposure to sign language (Hermans, Knoors, H.,Ormel, & Verhoeven, 2018) etc., which contributes a positive role play of parental sign language on academic achievements of these children. Although communication is a greater need of children with HI who are studying in inclusive classroom. They have only mode of communication for these children is sign language. In order to deal their daily life problems, there was a greater role of parental sign language who may help them to adjust with hearing world.

Conclusions

It is concluded that all the three levels of parental sign language (no expertise, to some extent experts, and experts) have significant contribution in the academic achievements of children with HI. Whereas parents who have expertise in sign language showed there greater contribution in academic achievements of children with HI. Parental sign language plays a significant role in academic achievements of children with HI studying in inclusive classroom.

Recommendations

Following recommendations were made on the basis of findings and conclusions

- i. The present research was conducted to find out the impact of parental sign language on the academic achievements of children with HI. There are still several aspects are still needed to explore like role of parental sign language for moral, social, and emotional development of children with HI. Therefore, future research should be conducted to explore these variations.
- ii. Parents of children with HI should learn sign language because it helps to develop the confidence in their children, and they can communicate with their parents. It also helps them to express their feeling and emotions for their parents.
- iii. Seminars and awareness campaigns should be organised for parents at government level to motivate them to learn sign language.
- iv. Training workshops and sessions should be conducted for parents to learn sign language.
- v. Trained Teachers of sign language should be provided to children with HI.
- vi. The government should develop a sign language translation software application which can convert the signs into speech and vice versa. It will be helpful for the parents, teachers and children with HI as well as the general public to communicate with each other.
- vii. Parents of children with HI and teachers' meetings should be organized for learning sign language.
- viii. A sign language channel should also establish on television or social media to facilitate the children with HI and their parents.

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