

# Awareness of Barrier Free Environment for Children with Hearing Impairment in Inclusive Schools – A Survey

Anindita A Banik<sup>\*</sup>, Aninda Duti A Banik<sup>\*\*</sup>, Arun Banik<sup>\*\*\*</sup>

<sup>\*</sup> BASLP, MASLP(ongoing); Ali Yavar Jung National Institute for the Hearing Handicapped

<sup>\*\*</sup> MASLP, PGDREPY, SLR (Certified in Voice Rehabilitation post Larynectomee), Ph.D (ongoing), Senior Audiologist & Specialist in Cochlear Implant at Kokilaben Dhirubhai Ambani Hospital & Medical Research Institute

<sup>\*\*\*</sup> Ph.D, M.S. (U.K.), Msc (Speech and Hearing), M.A (Distance Education), PGDHRM, PGDDE, Research Scholar at Rohemton university, London and Charles university, Czech Republic. Reader (speech & hearing) and Head, MDD, Ali Yavar Jung National Institute for the Hearing Handicapped, Mumbai.

**Abstract-** Education is birthright of every child irrespective of any category, caste, creed, race, religion and socioeconomic status & disability so there should be equality in education. Children who are born with Severe to Profound Hearing Impairment have greater difficulties in acquiring speech and language that create barriers in educational achievements & other developmental aspects of life. The Salamanca Statement states that every child has a fundamental right to education and that the education systems should be designed and educational programs, implemented to take into account the wide diversities of interest, abilities and learning needs (Rao & Rao, 2006). Every child has a fundamental right to education, and must be given the opportunity to achieve and maintain an acceptable level of learning. The world is moving towards Inclusive education. It has been realized that person with disability are more creative if given the right type of opportunity and right environment. This right kind of environment can be provided in inclusive schools with appropriate support for such children. However, one of the most potent road blocks in creating and maintaining inclusive culture are the presence of barriers in inclusive schools. To create a barrier free environment for children with hearing impairment in inclusive school it becomes highly essential that the teachers of the inclusive school dealing with children with hearing impairment are well aware of the various barriers coming across these students. So far no study has been done in this area, hence the present study “**Awareness of Barrier Free Environment for Children with Hearing Impairment in Inclusive Schools - A Survey**” is being undertaken. **The aims of the study are to find out the Awareness of Barrier Free Environment among the teachers of Children with Hearing Impairment in Inclusive Schools.** The objectives of the study is to find out the level of awareness of inclusive school teachers regarding barrier free environment needed for children with hearing impairment studying in inclusive classes regarding (i) attitudinal barriers (ii) environmental barriers (iii) instructional barriers and (iv) examination related barriers.

**Results and conclusion:** Analysis of result indicated that teachers were more aware towards examination related barriers while least aware towards environmental barriers. A significant correlation was found between the awareness about instructional barriers and the educational qualifications of the teachers, on the other hand no significant correlation was found between

awareness about barrier free environment and their educational qualifications, age and their teaching experiences. The concept of inclusive education in India is very new. Before the children with hearing impairment have been studying in special school hence the inclusive school teachers possessing more teaching experience have not dealt with such children. So they are not aware about the barriers coming in the education of children with hearing impairment. Thus teaching experience does not count for a positive association with awareness about barriers free environment. study by Dupoux et al. (2006) reported on "Teachers attitudes towards students with disabilities in Haiti which concluded that years of experience was not correlated with attitudes toward integration, which showed that the actual teaching experiences of teachers were less important in predicting attitudes than the teacher's own ideas and beliefs. Hence, study suggests that adequate education and technical input is necessary to create a good barrier free environment go better rehabilitation for children with hearing impairment in inclusive schools. A hearing impaired child face too many problem for them at every step of life these parries creates many problem in the education of hearing impaired child, so it is necessary to have knowledge about barrier free environment for the regular school class teachers so that adequate barrier free environment can be created in schools for better rehabilitation which has recommended for further study with large samples.

**Index Terms-** awareness, attitudinal barriers, barrier free environment, hearing handicapped, instructional barriers.

## I. INTRODUCTION

Education is birthright of every child irrespective of any category, caste, creed, race, religion and socioeconomic status & disability so there should be equality in education. Children who are born with Severe to Profound Hearing Impairment have greater difficulties in acquiring speech and language that create barriers in educational achievements & other developmental aspects of life. The Salamanca Statement states that every child has a fundamental right to education and that the education systems should be designed and educational programs, implemented to take into account the wide diversities of interest, abilities and learning needs (Rao & Rao, 2006). The goal of

barrier free design is to provide an environment that supports the independent functioning of individuals so that they can participate without assistance, in every day activities. Therefore, to the maximum extent possible, buildings, places, schools and transportation systems for public use should be made barrier free (Banik, 2007).

Barrier free environment refers to an environment, which is free of barriers, related to examination, attitude, instruction and environment and hence does not interfere in the education of children with hearing impairment. However, the world is moving towards Inclusive education & it has been realized that persons with disabilities are more creative if given the right type of opportunity and right environment.

## II. NEED FOR THE STUDY

Every child has a fundamental right to education, and must be given the opportunity to achieve and maintain an acceptable level of learning. The world is moving towards Inclusive education. It has been realized that person with disability are more creative if given the right type of opportunity and right environment. This right kind of environment can be provided in inclusive schools with appropriate support for such children. However, one of the most potent road blocks in creating and maintaining inclusive culture are the presence of barriers in inclusive schools.

To create a barrier free environment for children with hearing impairment in inclusive school it becomes highly essential that the teachers of the inclusive school dealing with children with hearing impairment are well aware of the various barriers coming across these students. So far no study has been done in this area, hence the present study "**Awareness of Barrier Free Environment for Children with Hearing Impairment in Inclusive Schools - A Survey**" is being undertaken.

## III. OBJECTIVES OF THE STUDY

1. To study the awareness of inclusive school teachers regarding barrier free environment needed for children with hearing impairment studying in inclusive classes regarding (i) attitudinal barriers (ii) environmental barriers (iii) instructional barriers and (iv) examination related barriers.
2. To find out the correlation between educational qualifications of inclusive school teachers with their awareness about (i) attitudinal barriers (ii) environmental barriers (iii) instructional barriers (iv) examination related barriers.
3. To find out the correlation between awareness about barrier free environment and age of inclusive school teachers.
4. To find out the correlation between awareness about barrier free environment and teaching experience of inclusive schools teachers.

### Research question

What % of inclusive school teachers have awareness of barrier free environment in terms of (i) attitudinal barrier? (ii)

environmental barrier? (iii) instructional barrier? (iv) examination related barrier?

### Hypothesis

Ho 1: There will be no correlation between the educational qualifications of inclusive school teachers with their awareness about (i) attitudinal barrier (ii) environmental barrier (iii) instructional barrier and (iv) examination related barrier.

Ho 2: There will be no correlation between inclusive school teacher's awareness about barrier free environment and their age.

Ho 3: There will be no correlation between inclusive school teacher's awareness about barrier free environment and their teaching experience.

### Review of Literature

Removing barriers and bringing all children together in school irrespective of their physical and mental abilities, or social and economic status, and securing their participation in learning activities leads to the initiation of the process of inclusive education (Jha, 2002). According to Mani (2002), in olden times the goal of providing education to disabled children was to equip them with intimate communication and arithmetic skills which would remove their total isolation from the non disabled population and allow them to interact with the outside world as necessary for basic daily needs. This gave rise to schools, which were targeted at children with a particular disability. However, it was found that limited special schools are not able to cater to the needs of all children with disabilities throughout India. There is also a rural urban imbalance in the facilities of special education. Creating a new infrastructure for special education is also not easy task. Also there are few problem and coming in the way of establishment of special schools like financial constraints, infrastructural requirements, death of trained professional, lack of access to support services etc.

Kochhar (2000) reported that inclusive school teachers feel that children with hearing impairment always get distracted in their classes by normal hearing students. Wetherill (1995) study about "Classroom Design for Good Hearing" concludes acoustical inadequacy in classroom, i.e. school children cannot hear much of what is said, while teachers must shout to be heard by all and secondly there was a situation in which some school children could hear the teacher of an adjacent class more clearly than their own teacher. As noise creates a lot of problem in education of a hearing impaired child for which noise absorber materials should be applied on the walls of the classroom due to which external sound cannot distract the attention of students with hearing impairment (BettenHausen 1998, Cummings, Quinn et al., 2000). Dupoux et al. (2005) studied on "Teachers attitudes towards students with disabilities in Haiti" concluded that years of experience was not correlated with attitudes toward integration, which showed that the actual teaching experiences of teachers were less important in predicting attitudes than the teacher's own ideas and beliefs.

Person with Disability Act (1995) stresses that "appropriate government and local authorities shall endeavor to promote education of children with disabilities in regular and general schools. When children with special needs are transferred from a special school to a regular school, there arise many difficulties to overcome i.e. barriers of different types faced by a hearing

impaired child. Since there is a major junk in the area of rehabilitative technology even then many of important issues are yet to be addressed in the modern world, one may predict that in future, special need for the disabled will be equipped with barrier free access based technology for the disabled. May be technology involved in “Access for All” gives the golden opportunity for the hearing impaired to go for a new landmark to lead a better quality life.

#### IV. METHODOLOGY

**Research Design:** The research design of the present study is of survey type. In modern scientific research, survey is taken as a primary and common method of collecting data. In order to collect the data Purposive and random technique was used.

**Sampling:** Total 11 inclusive schools for children with hearing impairment were selected from Greater Mumbai, Navi Mumbai and Thane district. However, altogether 33 class teachers of Inclusive schools selected were taken as respondent for collection data in the present study.

**Preparation of tools:** A questionnaire has been prepared as a tool for the study. A draft questionnaire was developed to assess the awareness of regular school teachers about barrier free environments for hearing impaired child in the areas of (i) Attitudinal barriers (ii) Environmental barriers (iii) Instructional barriers and (iii) Examination related barriers respectively. Total 33 questions were developed in the questionnaire.

**Validation:** In order to validate the questionnaire a validity test by carried out with the help 10 randomly selected judges having more than 5 years of experience in the field of rehabilitation and special education of the children with hearing

impairment. All the judges were given appropriate instructions & requested to make corrections and/or add new questions as they think relevant. However, the questionnaire was modified and finalized based on the response given by the judges. The questions, which were marked 80% as appropriate by judges (24 questions), were selected from different areas of barriers after final modification to conduct the study. In order to get the appropriate answer towards the selected questions, multiple-choice questions with four distracters were used in the tool.

**Scoring:** The correct answer of a question was given ‘1’ mark while incorrect answer was given ‘0’ mark. Total 70 sets of questionnaire were distributed and requested to fill it personally. Out of 70 sets only 46 questionnaires were collected & out of which 13 were rejected due to incomplete information. Thus total 33 samples were taken into consideration for the present study.

**Scheme of data analysis:** Minimum 66.6% correct responses were taken for judging adequate awareness. For data analysis various parameters were used such as for research questions percentage was calculated and for first hypothesis chi-square test and for second and third hypothesis Pearson correlation were applied using ‘SPSS’ software .

#### V. RESULTS AND DISCUSSIONS

On the basis of objectives and the research question framed data was analyzed the percentage of inclusive school class teachers have adequate awareness of barrier free environment in terms of (i) Attitudinal barriers (ii) Environmental barriers (iii) Instructional barriers and (iv) Examination related barrier respectively, shown in Table 1:

**Table # 1: Awareness of Inclusive School Teachers Regarding Barrier Free Environment for Children with Hearing Impairment.**

Sub-areas	n	No. of teachers having adequate awareness	% of teachers having adequate awareness	No. of teachers having inadequate awareness	% of teachers having inadequate awareness
Awareness about attitudinal barriers	33	16	48.5	17	51.5
Awareness about environmental barriers	33	6	18.2	27	81.8
Awareness about instructional barriers	33	16	48.5	17	51.5
Awareness about examination related barriers	33	25	75.8	8	24.2

Table # 1 indicates the level of awareness for four sub areas of barrier free environment which are attitudinal, environmental, instructional and examination related barriers. The numbers written in the columns indicates the number of teachers falling in the category of either having adequate awareness or inadequate awareness. In the sub area of awareness about attitudinal barriers and about instructional barriers there appears to be a pattern of distribution of teachers which is approximately half the teachers

are found to have adequate awareness and approximately half the teaches appears to have inadequate awareness. However, in the sub area of awareness about environmental barrier very less number of teachers (18.2%) falls in the category of adequate awareness. This means most of the inclusive class teachers have inadequate awareness about the environmental barriers. However, the level of adequate awareness among the inclusive school teachers was found as:

- I. 48.5% of inclusive school teachers have adequate awareness about attitudinal barriers.
- II. 18.2% of inclusive school teachers have adequate awareness about environmental barriers.
- III. 48.5% of inclusive school teachers have adequate awareness about instructional barriers.
- IV. 75.8% of inclusive school teachers have adequate awareness about examination related barriers.

awareness about these acoustical barriers which create problem in scholastic achievement of the student with hearing impairment. Educational research studies show that learning is dependent on the ability to communicate with spoken language and that perception of spoken language is the foundation for the ability to read and write. Wetherill (1995) reported about 'Classroom Design for Good Hearing' concluding acoustical inadequacy in classroom with its conclusion was that school children cannot hear much of what is said, while teachers must shout to be heard by all and secondly their was a situation in which some school children could hear the teacher of an adjacent class more clearly than their own teacher.

In the present study environmental barriers considered are related to loop induction, noise level of the classroom or sign language interpretation. It appears that teachers have least

**Table # 2: Correlation of Awareness about Attitudinal Barriers with Educational Qualification of Teachers**

Awareness about attitudinal barrier	Qualification				Total		Chi-square value	P- value
	Below graduation		Graduation and above		n	%		
	n	%	n	%				
Inadequate awareness (0-3)	9	60.0	8	44.4	17	51.5	0.793	0.373*
Adequate awareness (4-6)	6	40.0	10	55.6	16	48.5		

NS\* - Not Significant at 0.05 level of significance.

Attitude is an abstract concept. Short-term courses or training packages can substantially contribute to an increase in awareness but not in attitude. Hence a change in attitude requires time and factors internally related to a human being. Bringing about change in attitude is a complex and a slow process. Kochhar (2000) reported that inclusive school teachers

feel that children with hearing impairment always get distracted in their classes by normal hearing students. Present study reveals that less number of the teachers assessed the children with hearing impairment as differently abled instead termed them slow learners, and a liability with responsibility.

**Table # 3: Correlation of Awareness about Environmental Barriers with Educational Qualification of Teachers.**

Awareness about environmental barrier	Qualification				Total		Chi-square value	P- value
	Below graduation		Graduation and above		n	%		
	n	%	n	%				
Inadequate awareness (0-3)	13	86.7	14	77.8	27	81.8	0.435	0.510*
Adequate awareness (4-6)	2	13.3	4	22.2	6	18.2		

NS\* - Not Significant at 0.05 level of significance.

It is found that the teachers do not have adequate awareness about the acoustical management of classroom. Most of the teachers agreed that furniture of the classroom should have rubber brushes because it is must and it improves the look of the furniture. Only a small number of teachers gave correct answer that is to reduce noise level. Noise creates substantial problems

in education of a hearing impaired child. So noise absorber materials need to be applied on the walls of the classroom due to which external sound cannot distract the attention of students with hearing impairment. (Betten House 1998, Cummings, Quinn et al., 2000).

**Table # 4: Correlation between Awareness about Instructional Barriers with Educational Qualification of Teachers.**

Awareness about instructional barrier	Qualification				Total		Chi-square value	P- value
	Below graduation		Graduation and above		n.	%		
	n	%	n	%				
Inadequate awareness (0-3)	11	73.3	5	27.8	16	48.5	6.798	0.009**
Adequate awareness (4-6)	4	26.7	13	72.2	17	51.5		

S\*\* - Significant at 0.05 level of significance.

The correlation of awareness about instructional barrier with educational qualification of teachers is found to be statistically significant. There was statistically significant correlation found between awareness about instructional barriers and educational qualification of the teachers.

Out of the 33 respondents 51.5% of them had adequate awareness regarding instructional barriers of children with hearing impairment. 72.2% teachers having higher educational

qualification showed adequate awareness. Whereas 26.7% teachers had low awareness whose educational qualification was lower. Thus it showed that awareness regarding instructional barriers of school teachers is positively associated with their educational qualifications. This means that as the level of qualification increases the awareness about instructional barrier also increases.

**Table # 5: Correlation between Awareness about Examination Related Barriers with their Educational Qualification of Teachers.**

Awareness about examination related barrier	Qualification				Total		Chi-square value	P- value
	Below graduation		Graduation and above		n	%		
	n	%	n	%				
Inadequate awareness (0-3)	6	40.0	2	11.1	8	24.2	3.718	0.054*
Adequate awareness (4-6)	9	60.0	16	88.9	25	75.8		

NS\* - Not Significant at 0.05 level of significance.

There is no association between the educational qualification of the inclusive school teachers and their awareness regarding examination related barriers for children with hearing impairment. The reason is that the teachers are not aware of the

characteristics and the specific needs of these children and hence are not aware about the problems and the barriers these children face during their examinations.

**Table # 6: Correlation of Awareness about Barriers Free Environment among Inclusive Class Teachers and Their Age.**

Variables	n	Pearson Correlation Value	P- value
Awareness about attitudinal barrier with age	33	0.108	0.274*
Awareness about environmental barrier with age	33	0.040	0.412*
Awareness about instructional barrier with age	33	-0.02	0.443*
Awareness about examination related barrier with age	33	0.096	0.298*

NS\* - Not Significant at 0.05 level of significance.

From the above table, the Pearson correlation value of awareness about attitudinal barrier with age is 0.108 with P-value 0.274, awareness about environmental barrier with age is 0.040 with P-value 0.412, awareness about instructional barrier with age is - 0.02 with P-value 0.443 and awareness about examination related barrier with age is 0.096 and their equivalent P-value is 0.298. This P-value is greater than 0.05, so we accept the null hypothesis i.e.

Results indicated that there was no correlation between inclusive school teachers' awareness about barrier free

environment and their age. Hence it is found that there is almost negligible relationship between awareness about barrier free environment among teachers and their age. Program of inclusive education is recently included in our country hence teachers working in inclusive school did not received much input regarding barrier free environment during their training courses. There is no age limit for acquisition of awareness in an individual hence there is no particular correlation.

**Table # 7: Correlation of Awareness about Barrier Free Environment among Inclusive Class Teachers and their Teaching Experience.**

Variables	N	Pearson Correlation Value	P value
Correlation of awareness about attitudinal barrier and teaching experience	33	0.020	0.457*
Correlation of awareness about environmental barrier and teaching experience	33	0.070	0.350*
Correlation of awareness about instructional barrier and teaching experience	33	0.107	0.277*
Correlation of awareness about examination related barrier and teaching experience	33	0.018	0.460*

NS\* - Not Significant at 0.05 level of significance.

The results indicated that P-value is greater than 0.05, and hence accepted null hypothesis i.e. there will be no correlation between inclusive school teachers awareness about barrier free environment and their teaching experience. Hence it is found that there is almost negligible relationship between awareness about barrier free environment among teachers and their teaching experience.

Thus teaching experience does not count for a positive association with awareness about barriers free environment. study by Dupoux et al. (2006) reported on 'Teachers attitudes towards students with disabilities in Haiti which concluded that years of experience was not correlated with attitudes toward integration, which showed that the actual teaching experiences of teachers were less important in predicting attitudes than the teacher's own ideas and beliefs.

**Table 4.7: Correlation between knowledge about barriers free environment characteristics among teacher and their age**

Parameters	Age		
	Correlation coefficient	Value of t	Value of p
Knowledge about attitudinal barrier	0.108	0.61	P > 0.05
Knowledge about environmental barrier	0.040	0.223	P > 0.05
Knowledge about instructional barrier	-0.02	0.145	P > 0.05
Knowledge about examination related barrier	0.096	0.733	P > 0.05

Program of inclusive education is recently included in our country hence teachers working in inclusive school did not received any input regarding barrier free environment during their training courses. There is no age limit for acquisition of awareness in an individual hence there is no particular correlation. However, here was no correlation was found in all the variables of barriers free environment under taken in the study, hence the null hypotheses taken were accepted in the present study.

**Delimitation of the study**

1. The sample size chosen for the study was limited due to time constraint since it was the need to complete the study within an academic year along with course.
2. For deciding adequate awareness, scores above 66.6% were considered.
3. Only four aspects of barriers were selected for the present study.

4. The study was limited to inclusive schools & its teachers only those having at least one CWHI in their class.
5. Only awareness levels were studied in present study.

#### Recommendations for further study

1. The study can be carried out as state wise survey or at all India level on larger samples.
2. The criteria for awareness level can be extended upto 80% criteria for future research.
3. Other aspects of barrier free environment can be included in future research.
4. The study can be done to other schools such as special school for hearing impaired.
5. The study can be extended to other target variables such as parents, Government Official and so on.
6. The status of barrier free environment can be studied in Government office, public buildings in future.

#### Recommendations for state government authorities

1. To arrange and conduct orientation programs for the regular school teachers to orient them about various disabilities, barriers free environment and their special needs.
2. The authority should focus on providing training to general school teacher to teach the hearing impaired children in the Inclusive classrooms and their various access needs required for the education of CWHI.
3. The school authority should be encouraged to give hearing impaired child an opportunity to learn with others.

#### Applications of present study

1. The information of the present research can cater the needs of the teachers of their children's educational requirement in Inclusive set up.
2. Further, this will give a feed back regarding the present status and knowledge available among teachers on barrier free issue.
3. Also, the present research will further enhance the school authorities for better planning and technological development including architecture in school build up required for the CWHI for their education.
4. This study can give better information for further academic research and developmental purposes, which can be ultimately implemented for fulfilling educational needs of CWHI in Inclusive set up.

## VI. CONCLUSION

India is living epitome of the 'Spirit' Universality and has proved it's 'unity in diversity but universalizing of education has remained a great challenge in the number of children with disability including hearing impairment. Since "Education" for All is set as own national goal. In order to achieve the population of children who we disadvantaged should not be overlooked as creating optimum conditions for students is prime aim of teachers in school. As a hearing impaired child face too many problem for them at every step of life these parries creates many problem in the education of hearing impaired child, so it is necessary to have knowledge about barrier free environment for the regular school class teachers.

## REFERENCES

- [1] Banik, A. (2007). "Need of barrier free facilities for children with Hearing Impairment in Schools" paper presented in National Conference for Education of the Deaf, Ri-Bhoj (Meghalaya), 10-13th December 2007.
- [2] Bettenhausen, S. (1998). Make proactive modifications to your classroom. *Intervention in School and Clinic*, 33(3), 182-183.
- [3] Cummings, C. (2000). *Winning strategies for classroom management*. Alexandria, VA: Association for Supervision and Curriculum Development.
- [4] Dupoux, E., Wolman, C., and Estrada, E. (2005). Teachers' attitudes toward integration of students with disabilities in Haiti and The United States. *International Journal of Disability, Development and Education*, 52 (1), 45-60.
- [5] Kochhar, C., West, L. and Taymans, M. Juliana (2000), 'Successful Inclusion', Pearson Education Upper Saddle River, New Jersey.
- [6] Quinn, M. M. Osher, D., Warger, C. L., Hanley, T. V., Bader, B. D., & Hoffman, C. C. (2000). Teaching and working with children who have emotional and behavioral challenges. Longmont, CO: Sopris West.
- [7] Rao, I., Sharda and Rao, P. (2006) Moving away from labels 'A school for all': CBR network (South Asia).
- [8] Jha, M. M. (2002), *School without walls! Inclusive Education for All*, Reed Educational and Professional Publishing Ltd.
- [9] Mani, (2000), 'Inclusive Education in Indian Context', International Human Resource Development Center (IHRDC) for the Disabled.

## AUTHORS

**First author-** Ms. Anindita A Banik- BASLP, ASLP(*ongoing*); Ali Yavar Jung National Institute for the Hearing Handicapped, India. Email- aninditabanik20@gmail.com

**Second author-** Mr. Aninda Duti A. Banik, MASLP, GDREPY, SLR (*Certified in Voice Rehabilitation post Larynectomee*), Ph.D (*ongoing*), Senior Audiologist & Specialist in Cochlear Implant at Kokilaben Dhirubhai Ambani Hospital & Medical Research Institute. Email- anindabanik1@gmail.com

**Third author-** Dr. Arun Amarhand Banik, Ph.D, M.S. (U.K.), Msc (Speech and Hearing), M.A (Distance Education), PGDHRM, PGDDE, Research Scholar at Rohemton university, London and Charles university, Czech Republic. Reader (speech & hearing) and Head, MDD, Ali Yavar Jung National Institute for the Hearing Handicapped, Mumbai. Email- arunbanik@rediffmail.com