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Need of access facilities for persons with hearing disabilities

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ABSTRACT

Accessibility can be refer as the "ability to access" and benefit from some system or entity. The concept access facilities focuses on enabling barrier free environment for persons with disabilities, or enabling access through the use of assistive technology brings overall development in accessibility and benefits to everyone. All human beings are physically disabled for some time in their lives. But those who remain healthy and without disability all their lives are very few. Thus, public buildings should be accessible and barrier-free to both able body and disabled population as well. Persons with disability find it difficult to gain access into and operate freely without assistance in many public buildings in India. This publication is an attempt to provide information an inventory of facilities required for disabled people in public places. It is an observational study covered the identification and ascertaining the functional state of access facilities available including schools etc. A total of 10 such public buildings samples were observed. The results show that major facilities required by disabled people are lacking in many public places. Some of the access facilities identified in few public buildings are in poor state of operation. However, absence of such key facilities restricts the activities of normal population as well as physical disability people. Hence, they cannot work freely in such environment and become productive as tax-paying members of the nation. Due to shortfall or perhaps total neglect in provision of such access facilities, the movement, competence and talents are being restricted for the disabled population. Hence, equal opportunity and non-discrimination brings good equation for every citizen in this developing country constitute a barrier free environment for the development of their abilities. At last, the society at large is deprived of the abilities and talents in people with disabilities.

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1. Background

United Nations (1990) taken initiatives concerning global policies and programmes in areas such as education, environment, human rights, population and development, social development, advancement of women, children, and shelter and habitat incorporated disability issues as substantive concerns in their declarations, frameworks and

strategies action programmes.¹ Affirms from the policy guidelines set out for action for achieving the goals of the Asian and Pacific Decade of Disabled Persons within the policy areas such as national coordination, legislation, information, public awareness, accessibility and communication, education, training and employment, prevention of causes of disability, rehabilitation services, assistive devices, self-help organizations and regional cooperation. However, "Modern technology has had a profound influence on the education of children with

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disabilities and on hearing impaired children in particular” (Levit, 1985).²

2. Introduction

Access facilities enables the person’s with hearing disabilities to move about safely and freely, and use the facilities within the built environment. The goal of access design is to provide an appropriate environment that supports the independent functioning of individuals so that they can participate without assistance, in everyday activities. Therefore, to the maximum extent possible, buildings, places, schools and transportation systems for public use will be made barrier free access facilities for children with disabilities.³

However, incredibility to the built environment, including educational institutions and public transport system, is still the major barrier which prevents persons with disabilities from activity participating in social and economic activities in the countries of the region. Few governments has recognized disabled persons basic right to equal access to built environments. Creating inaccessible built environments, streets and transport systems discriminates against persons with disabilities and other members of society is no more suggestable. The concept of universal inclusive design has emerges as a result of the struggle of persons with disabilities for accessible physical environments. Universal inclusive design approaches have proven to benefits not only to persons with disabilities but also many other sectors within the society such as older persons, pregnant woman and parents with young children.⁴

The universal inclusive design approaches provides safer environments for everybody in the society by reducing the rate of accidents. Physical barrier are known to prevent full participation, equal opportunities and reduce the economic and social output of persons with disabilities. Investments in the removal with prevention of architectural design barriers are increasingly being justifies on economic grounds, particularly in employment, health care, government’s management, public discourse, cultural and religious activities, leisure and recreation. It is important to not that not only facilities but also services should be accessible including in educational institutions particularly schools for the growth of the persons with hearing impairment.

Accessible Education for children with hearing impairment

Reports from the sources indicated that in India, there have been considerable changes occurs in the educational scenario. The number of schools and non-formal education centers has increased to over 700 thousands and 200 thousands respectively. The total enrolment in primary, upper primary and higher secondary schools levels is over 145 million children. The Gross Enrolment Rates (GER) for the age groups 6-11 years and 11-14 years were 94.9% and

58.8% respectively during the year 1999 – 2000. However, about 40 million children of school going age and youth and about 7.5 million neo-literates are yet to be created for available facilities. Despite considerable expansion of educational facilities, the goal of universalisation of education remains elusive. The Asia and the Pacific Decades of Disabled Persons (1993-2002) was held in Bangkok from 26-30 June 1995. Such report mentioned that 93 million (62%) of all children with disabilities under 15 years of age live in Asia and the Pacific Region and less than 5% of them receive education and training.⁵

However, in the 21st century, the world is reeling under the impact of knowledge explosion imparted by technologies in every field. Such technology improves the gap of communication, gluing the pieces of information and creating a clear cut picture for the target population. In India, still it is in complex problems due to factors like geographic idiosyncrasies, illiteracy, ignorance and poverty.⁶ Women with disabilities including those with hearing impairment and other multiple disabilities were naturally inactive citizens and they do their domestic work for their survival. The persons with disabilities was given medical treatment believing that person will be cured, and come to terms with ‘normalcy’, which is, in fact, not true. Such target population struggles to come forward to utilize rehabilitative access to enhance communication in the society. A comprehensive countrywide sample survey of persons with disabilities was undertaken by the NSSO (2002) to estimate the magnitude of persons with disabilities in India. About 1.8% of the total population in the country (i.e. 16.15 million parsons) has physical and sensory disabilities. This includes children with communication disorder, hearing disorder, learning disabilities, behavioral disorder and multiple handicaps.⁷

2.1. Need of study

In order to meet the challenges, it is necessary to look for alternative strategies and approaches particularly to ensure not only access but also freedom, relevance and quality necessary for person with disabilities. To transform a system and to take on unfinished task of inclusive education, the National Institute of Open Schooling (NIOS) has to play a significant role toward education. This has been reflected in the National Policy of Education (1986) which stated that ‘future emphasis shall be on distance and open learning systems to provide opportunities an access to all the major target groups, especially the disadvantaged viz. women, scheduled castes and scheduled tribes, Other Backward Class (OBC) and Economically Weaker Section (EWS) the adult working class and people serving in the far-flung remote areas. Hence such study becomes a need in the field.

3. Aims and Objectives of the Study

The aim is to study through the observation regarding the need of access facilities required for Persons with Hearing Disabilities.

3.1. Review of literature

There are ample Problems faced by the hearing impaired individuals for their daily life. Hearing impairment occurs when there is problem or damage in any part/s of the ear. Hearing impairment does not mean total deafness (Friz & Smith, 1985). The primary problem of hearing impairment is difficulty in understanding speech needed for communication. The essence of hearing impairment is its effect on communication resulting on cognitive, speech, language and psychological development (Verson & Andrews, 1990). PWD Act (1995) defines "hearing impairment as loss of sixty decibels or more in the better ear in the conversational range of frequencies".

In fact, the auditory system is impaired leading to restriction of verbal language comprehension. If not intervened, then that person will have profound set backs leading to educational and employment problems. In our daily activities, we hear sounds such as ringing of the alarm clock, water noise in the bathroom, the milk cooker whistles and the radio announcer reading the news, lively talk as the family gathers round the breakfast table and the front door slams and the car engines start making noise and disappear. All these indicate that different sounds are in the environment which the hearing impaired may fail to notice. It is difficult for persons with hearing impairment to grasp all sounds. The hearing impaired person does not have the same opportunities to access and learn skills like the hearing people.

Moreover the overall impact that hearing impairment will have on a child's life is greatly influenced by the age of onset, the age at which the hearing loss was diagnosed, the degree of impairment, the etiology and to lesser extent, by the sex and race of the child. So far it is discussed that the effect of hearing impairment involves more than a reduction in the ability to communicate, especially when the impairment is congenital or acquired very early in life. Such impairment severely impedes the development of normal speech and language. Great importance is thus attached to the use of technological aids that will improve communication after proper access without any barrier, and that, in turn, will facilitate the development of speech and language in the hearing impaired child. (Levit, 1985)⁸

In spite of all the problems faced by the hearing impaired individuals, India is still in a state of progress in the overall development of the disabled individuals in a short time, as per planning made by the professionals. The barrier free facilities to develop the disabled individual to be capable, independent and come into the stream of hearing

people which implicated greater benefits to the persons with hearing impairment in the process of intervention, education and rehabilitation. There are many possible ways in which the hearing-impaired individuals can build effective communication and all round development through the sources of access technology. Two essential components namely, professionals and the disabled persons in the area of disability including hearing impairment can make such technology advantageous.

3.2. Access needs for the persons with hearing impairment

Barrier free facilities is confined to structural and environmental barriers and measures to overcome such barriers creating physical environment, that will not interfere in the life of persons with hearing impairment in public places such as schools, colleges, hospitals, shops, Bus Stands, Railway stations, Post Office, Banks, Court, and places of worship etc and thus improving their quality of life.

Government has the responsibility to improve the understanding of issues concerning barrier-free environments in the communities. This is particularly referring in the case of remote rural areas where there is lack of non-governmental organization (NGO) development assistance and the communities have limited access to the mass media. The need for public awareness activities in rural areas is critical in view of the greater difficulty, compared with urban areas, in enforcing access legislation and policy provisions. However, action has been initiated to improve public awareness of access issues among rural communities including the mobilization of village-level opinion leaders and involving them in dissemination of the relevant messages using folk and traditional media. However, few issues are need to taken critically to create the barrier free access for the persons with hearing impairment viz.

1. There is a need to improve the understanding of issues concerning barrier-free environments in the communities particularly in the case of remote rural areas.
2. There is a need for public awareness activities in rural areas, which is critical in view of the greater difficulty, faced there as compared to urban areas, to enforce access legislation and policy provisions.
3. Action to improve public awareness towards barrier free access issues among rural communities is needed including mobilization of village-level opinion of leaders and involving them in dissemination of the relevant messages using folk and traditional media for creating better barrier free environment for persons with hearing impairment

In order to ensure that persons with disabilities realize their rights, it is essential that the Government and Non-Government Organizations understand the issues related to management of disability, at various levels. Very often Government officials are not aware of the rights of the disabled people as granted by the Constitution and by the Central Govt. This ignorance results in delay or denial of services and facilities to the persons with disabilities. In fact, the barrier faced by persons with hearing impairment is in accessing information and achieving successful communication.

Disability Act 1995 cast obligations on appropriate Governments and local authorities for creating barrier free facilities for the persons with disabilities for the following seven categories viz (1) Persons with Visual Impairment (2) Persons with Low Vision (3) Person with Leprosy Cured (4) Persons with Hearing Impairment (5) Persons with Locomotors Disability (6) Persons with Mental Retardation and (7) Persons with Mental Illness. "Access for All" has been one of the focus areas in the light of equal opportunities, protection of right and full participation of the persons with disabilities in the social mainstream. 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.

4. Materials and Methods

A self-made questionnaire prepared containing the various access facilities required for persons with disabilities in public places and schools. A total 10 different samples were considered for the study and observed. Based on the observation, a discussion were made in the research paper about the basic access facilities required for the disabled population.⁹

5. Results and Discussion

Accessibility enables the effective participation of disabled persons in public and private areas and the use of urban equipment and street furniture for their convenient movement. The research study observation showed many physical inaccessibility in public places, toilet facilities, making it difficult or even impossible the accessibility for the disabled to use. The inclusion of accessibility features in public places, schools, work places, health services for this clientele provides equal opportunities and social inclusion. However, the study made the following suggestions to improve the barrier free environment for the persons with disabilities such as:

5.1. Facilities required enable barrier free environment for persons with hearing impairment in schools

1. Persons with hearing impairment have difficulty in processing sounds and words in noisy environment. Hence it is necessary to create a less noisy environment for their better communication.
2. Most often hearing impaired persons rely on lip reading. This is helped if there is good overall light that is non-reflective. Hence having adequate light on the speaker's face to facilitate speech reading will be best suitable for persons with hearing impairment.
3. They may have difficulty using telephones etc. Provisions of assistive devices for better audible signals may, in certain cases, be supplemented with visual signals.
4. In school public buildings, loudspeaker systems should be clearly audible. Supplementary visual information should be provided in school public buildings also places like railway stations and airport by way of captions.
5. Loop induction units may be installed in all the class rooms, auditorium, theatre hall, meeting rooms etc to improve reception for persons with hearing impairment using hearing aids.
6. Infrared sound system may also be provided in class rooms, multiple auditoriums to avoid sound over spills from one area to another.
7. Use of amplification aids such as Induction Loop System, FM System, and Infrared System, to transmit signals to overcome environmental noise in an educational set up or public enclosures will help the persons with hearing impairment for better communication.
8. Use of captioning scrolling information in class rooms, public places to overcome Information barriers for the persons with hearing impairment.
9. Availability of sign language interpreter services in schools, public places is essentials
10. Making provision to use Fax / SMS / e-mail / chatting services etc by persons with hearing impairment for entertainment and easy communication.
11. Use of alerting devices in school / public places for safety measures :

5.2. Facilities required enable Barrier Free Environment for persons with hearing impairment in school buildings

1. Provision of appropriate acoustics in the buildings to facilitate good speech reception
2. Provisions of appropriate auditory lighting facility in the lift
3. Use of digital lighting facility in toilet in schools, flats, offices buildings etc

4. Use of Fire alerting through lights for fire evacuation needs for persons with hearing impairment in every educational set ups.

National Institute for the Hearing Handicapped (2007) suggests a comprehensive plan to Government of India for creating barrier free facilities in schools, class rooms, and other places that enable the children with hearing impairment to develop an independent living in the society. However, based on the observation in the present study, the following suggestions were further recommended:

5.3. (a) Planning in barrier free environment

1. Rooms should be acoustically well insulated
2. In public buildings loud speaking systems should be clearly audible and supplementary visual information should be provided through Indian Sign Language and text.
3. Video phones to be made available in public places
4. For persons with communication disorders such as the deaf blind or the Alternative and Augmentative Communication users suitable sign system should be made available.
5. While using telephones audible signals may be supplemented with visual signals, telephone operator assisted relay services
6. Loop induction, FM or Radio Frequency hearing aid units may be installed in auditoria, theaters, meeting rooms etc.
7. Movies should be subtitled supported by sign box
8. At least one telephone in the building equipped with a loop induction unit
9. Infra red sound reinforcement system may also be provided in multiplex auditoria

5.4. (b) Railway station :

1. All the audio announcement should be supplemented with visual information display including sign and text.
2. At least one of the reservation centers should have an induction loop unit
3. The counters should have pictography maps indicating all the services offered
4. At least one of the counter staff should be sign language literate and preferably should have a facility of text display.

5.5. (c) Alarm system:

1. Alarm signals such as flashing lights, vibrating beds/belts
2. Specially designed alarming smoke detector devices in houses, school buildings, hostels and important public places need to be made available.

5.6. (d) Raising the alarm:

1. Special devices like fire alarm boxes, emergency call buttons and lighted panels
2. Telecommunication devices (TDD for typing in messages)
3. Pre-recorded message installed in the telephone for notifying the fire department

5.7. (e) Design requirement:

1. Provision of information board in an easily understandable manner
2. Provision of illuminated sign ages, layout diagrams to help the persons easily reaches the desired place.
3. Flashing door bells and display in lifts
4. Use of non noisy electrical gadgets, fittings and soft tile flooring

5.8. Access facilities for disabled persons during COVID-19 Pandemic.

The World Health Organization (WHO) declared the outbreak of a novel coronavirus disease i.e. COVID-19 to be a pandemic year due to the speed and scale of transmission throughout the world in March 2020. The entire public health authorities including WHO around the world are taking action to contain the COVID-19 outbreak the persons with disability. Hence, certain populations particularly those with disability may be impacted more significantly by COVID-19. This impact can be mitigated if a simple actions and appropriate protective measures are taken within time through access facilities available around them.

Authorities are concern about the additional considerations needed for persons with disability during the COVID-19 outbreak. Actions need to be taken to ensure that people with disability can always have access with health-care services and public health information they require, including during the COVID-19 outbreak. Persons with disability may be at greater risk of contracting COVID-19 because of the following reasons:

1. Access implementing basic hygiene measures such as hand-washing, hand sanitization facility etc. in public places, schools. The PWDs may have difficulty to reach hand basins or sinks due to their physical disability. Hence, support may be made available to reach out their physically inaccessible, or a person may have physical difficulty rubbing their hands together thoroughly in schools.
2. PWDs have the difficulty in enacting social distancing because of their disability and additional support required to maintain social distancing with escort.
3. Accessible support required to touch things to obtain information from the environment or for physical support for their activities.

4. PWDs have the barriers to access the general public information in public places and schools. Access facility required to get the adequate information followed all COVID-19 protocol. Depending on underlying such conditions, persons with disability may be at greater risk of developing more severe cases of COVID-19 if they become infected. This may be because of COVID-19 exacerbating existing health conditions, particularly those related to respiratory function, immune system function, heart disease or diabetes.
5. Barriers to accessing health care in pandemic condition is important. Persons with disability may also be disproportionately impacted by the outbreak because of serious disruptions to the services they rely on. The barriers experienced by students with disability can be reduced if concern authorities take appropriate action on this important issue.

6. Conclusion

Accessibility planning is an important step before starting the rehabilitation of the disabled. Hence, all the professionals and the collaborative agencies need to focus on to create adequate barrier free access and facilities as well as environment for persons with hearing impairment where they can lead a normal life like any other normal persons.⁸ However, the architect of the Disability Act were perhaps conscious of the fact that creation of barrier free access in educational institutions, vocational training centres, places of work, buildings, offices, and public places etc special designs and special technologies would need to developed. Therefore, Government, Non-Government (NGOs) authorities and other local authorities should promote and sponsor research to overcome the barrier in communications faced by the person with hearing impairment.

Levit (1985) concluded that the hearing aid, FM speech transmission devices, special audio-visual systems and telecommunication devices for the deaf are all examples of technological aids that have had a direct impact on the education and barrier free communication of the hearing impaired.⁵

7. Source of Funding

None.

8. Conflict of Interest

None.

References

1. Hegarty S. Meeting Special Needs In Ordinary Schools: An Overview Second Edition; 1987. Available from: <https://www.bloomsbury.com/uk/meeting-special-needs-in-ordinary-schools-9781441156044/>.
2. Levit H. Technology and the Education of the Hearing Impaired in Education of the Hearing Impaired edited by Frank Powell; 1985. Available from: <https://www.amazon.com/Hearing-Impaired-Employee-Untapped-Resource/dp/0887441084>.
3. Lewis V. Development and Disability; 2003. p. 466. Available from: <https://www.wiley.com/en-us/Development+and+Disability%2C+2nd+Edition-p-9780631192749>.
4. Chopra G. Paper on Prevention, Early Detection And Intervention In Disabilities, presented paper in working group-empowering persons with disabilities; 2004. p. 325. Available from: http://mospi.nic.in/sites/default/files/publication_reports/Persons_Disabilities_31mar21.pdf.
5. Technology and the Education of the Hearing Impaired in Education of the Hearing Impaired edited by Frank Powell, Terese, Sandy, Donald. Taylor and Francis Publishing. Printed in USA ; 2002. Available from: http://www.rehabcouncil.nic.in/writereaddata/dedse_dhh09.pdf.
6. National Sample Survey Organization (2002), Ministry of Statistics And Programme Implementation, Govt Of India -Disabled Persons In India, New Delhi.; 2003. Available from: <http://mospi.nic.in/NSSOa>.
7. Fritz G, Smith, Nancy. Biwako Millennium Framework for Action Towards An Inclusive Barrier Free Rights Based Society for Persons with Disabilities in Asia and the Pacific (2003), Government of India, Ministry of Social Justice and Empowerment, New Delhi.; 1993. Available from: <https://www.ncda.gov.ph/international-conventions-and-commitments/other-international-commitments/biwako-millennium-framework/>.
8. Banik A. Banik, A. (2006), Understanding accessibility needs of person with hearing impairment, ; 2006.
9. Planning a Barrier Free Environment, (2004), Office of the Chief Commissioner for Persons with Disabilities, New Delhi. . Available from: <https://cdn.nic.in/SJ/PDFFiles/PlanningForBarrierFreeEnvironment.PDF>.

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