

IMPROVING ACCESSIBILITY IN PUBLIC SPACES FOR INDIVIDUALS WITH HEARING LOSS (A FIELD-BASED STUDY)

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01

Abstract

Keywords- Hearing Disability, Accessibility, Public Spaces, Hearing Loss, Perception

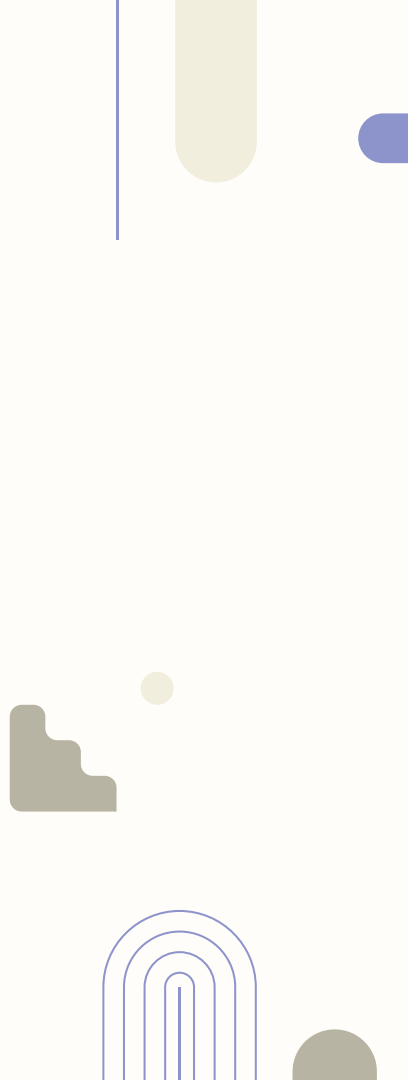
Abstract

Accessibility to public spaces is a fundamental aspect of social inclusion and equality. Individuals with hearing disability are significantly impacted when it comes to public spaces. Common issues include a lack of visual information systems, ineffective emergency communication, and insufficient training of public service personnel in sign language, which can impact their ability to participate in social, economic, and cultural activities. In the present study, a sample of 31 respondents (N=31) with hearing disability were selected through purposive sampling technique to fill out a survey.

The survey questionnaire was created to assess accessibility perception across various public spaces such as shopping malls, public transport etc. Google Forms were used to circulate the survey. Findings revealed that among people reporting different levels of hearing loss, there is a significant difference in their accessibility perception. The study revealed that there is no significant difference across gender in accessibility perception. Even across age, there was no significant difference in perception of accessibility. These findings imply that within the respondents, the level of hearing loss was a contributing factor to their different perceptions. However, the same cannot be said for other variables.

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Introduction



Introduction

Context:

Accessibility to public spaces is a fundamental right, ensuring social inclusion for all, including individuals with hearing disabilities.

Challenges Faced:

Deaf individuals often encounter barriers in public spaces, such as:

- Lack of visual information systems
- Limited sign language support from staff
- Ineffective emergency communication systems

Introduction

Objective of the Study:

This research aims to understand how hearing loss impacts individuals' perceptions of accessibility in different public spaces like malls, public transport, hospitals, and government offices.

Significance:

The study provides insights to guide improvements in public space design, making them more inclusive for people with hearing disabilities.



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Rationale of the study



Rationale of the study

Why is this topic important?

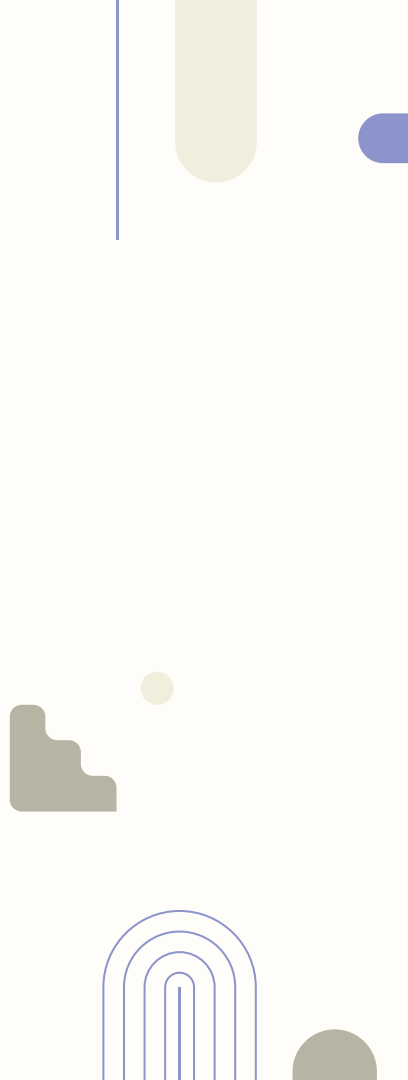
- Accessibility is a right, and people with hearing disabilities deserve the same opportunities for participation as everyone else.
- Yet, they continue to face unique challenges, such as limited access to auditory information, lack of sign language services, and insufficient awareness of their needs in public spaces.

Relevance of the Study:

This research shines a light on the importance of ensuring public spaces are designed to cater to diverse accessibility needs, particularly for the deaf community. Addressing these challenges can foster inclusivity, allowing individuals with hearing disabilities to participate fully in social, economic, and cultural activities.

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Methodology



Methodology

Sample Description:

- A total of 31 individuals with varying degrees of hearing impairment were selected for the study.

Sampling Method:


- Purposive sampling was employed, where participants were specifically chosen based on their hearing disabilities.

Data Collection Method:

- A structured questionnaire was circulated through Google Forms. The questions focused on how accessible different types of public spaces (e.g., malls, public transport) are perceived to be by the respondents.

Key Variables:

- The study explored the respondents' perceptions of accessibility based on variables like age, gender, and level of hearing loss.



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Results

Results

Table 1 revealed that there were no significant mean differences on Total Accessibility Perception ($t=0.44$, $p = 0.66$, $p>0.05$) Findings show that there was no significant difference between male ($M= 28.94$, $SD = 2.28$) and female ($M= 28.64$, $SD= 1.15$) on Total Accessibility Perception. The value of Cohen's d was 0.16 which indicates a small effect size.

		n	Mean	SD	t	df	p	Cohen's d
Total Accessibility Perception	Male	17	28.94	2.28	0.44	29	.66	0.16
	Female	14	28.64	1.15				

Table 1 shows the descriptive statistics and t-test for Accessibility Perception among gender

Results

Findings from Table 2 reveal the Mean and Standard Deviation across levels of hearing loss. Table 3 revealed that there is a significant mean difference across respondents on level of hearing loss and Total Accessibility Perception ($F = 3.48, p < 0.05$) The value of η^2 is 0.29 which indicates a moderate effect size.

	n	Mean	Std. Deviation
Moderate Hearing Loss [35 to <50 dB]	8	28.25	1.67
Severe Hearing Loss [65 to <80 dB]	3	31.67	2.31
Moderately Severe Hearing Loss [50 to <65 dB]	10	28.5	1.51
Mild Hearing Loss [20 to <35 dB]	9	28.89	1.54
Total	30	28.87	1.83

Table 2 shows the descriptive statistics of Mean and SD on level of hearing loss

	Sum of Squares	df	Mean Square	F	p	η^2
Level of hearing loss	27.91	3	9.3	3.48	.03	0.29

Table 3 shows One Way ANOVA to compare means for Level of hearing

Results

Findings from Table 4 reveal the Mean and Standard Deviation across age. Table 5 revealed that there is no significant mean difference across respondents on age and Total Accessibility Perception ($F = 0.73$, $p = 0.493$, $p > 0.05$). The value of η^2 is 0.06 which indicates a small effect size.

Table 5 shows one way ANOVA to compare means for accessibility perception

	Sum of Squares	df	Mean Square	F	p	η^2
Age	5.73	2	2.86	0.73	.493	0.06
Residual	86.11	2	3.91			
		2				
Total	91.84	2				
		4				

Table 4 shows the descriptive statistics for age

Table 4 shows the descriptive statistics for age

	n	Mean	SD
30-40	10	28.4	2.32
19-29	7	29.57	1.9
41-50	8	29	1.51
Total	25	28.92	1.96

Table 5 shows one way ANOVA to compare means for accessibility perception

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Discussion



Discussion - Accessibility in Public Spaces

Key Findings:

- **Most accessible spaces:**

Shopping malls (N=21), government buildings (N=15), libraries (N=12)

- **Malls:**

Added features like braille signage, wheelchair access, disabled-friendly washrooms, and allocated parking spaces (The Hindu Business Line, 2015)

- **Remaining Issues:**

Banik & Banik (2021) found that key facilities in public buildings are still lacking for individuals with hearing and physical disabilities.

Communication Methods in Public Spaces

Common Communication Methods:

- Written notes (N=20), sign language (N=15), and lip reading (N=15) are the most frequently used.

- **Text-based communication:**

Effective for people with hearing disabilities (Haynes, 2014).

- **Technology Use:**

Only 6 respondents use mobile apps for communication, despite technological advancements.

- **Global Trends:**

Research shows information technology helps people with hearing disabilities participate more in social activities (Lersilp & Lersilp, 2019).

Communication Methods in Public Spaces

Age Findings:

- No significant difference in accessibility perception based on age or gender.
- **Older Individuals:**
 - Face challenges like lack of interpreters in healthcare (Lesch et al., 2019).

Gender Findings:

- Men have more opportunities in deaf organizations (Kisch, 2007).
- Women tend to receive more audiological rehabilitation (Turunen-Taheri et al., 2018).

Hearing Loss Levels:

- **Moderate to severe hearing loss:**
Leads to more communication barriers and reduced quality of life (Dalton et al., 2003).
- **Reduced Mobility:**
Older individuals with major hearing loss have lower mobility in public spaces (Polku et al., 2015).



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Conclusion



Conclusion

Summary of Findings:

- The study confirmed that individuals with greater hearing loss face more significant accessibility barriers in public spaces.
- Other factors such as age and gender do not appear to significantly affect these perceptions within the study sample.

Key Takeaway:

- To improve inclusivity, public spaces need to focus on providing resources that address the needs of individuals with varying levels of hearing loss.

Next Steps:

- Larger-scale research involving a more diverse population is necessary to generalize these findings and better understand the full scope of accessibility challenges faced by the deaf community.

Limitation of the Study

Sample Size:

- The study only included 31 respondents, which limits the ability to generalize the findings to a larger population of individuals with hearing disabilities.

Age Range:

- The respondents' age range was not sufficiently broad to fully capture how different age groups perceive accessibility.

Geographical Limitation:

- The study was conducted primarily in the National Capital Region (NCR), which is more developed compared to other parts of the country. This may have skewed the results as accessibility standards in other regions could differ.

Future Research Needs:

- Future studies should aim to include a larger sample size with broader demographic representation.



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References

1. Banik, P., & Banik, S. (2021). Evaluation of accessibility in public buildings for individuals with disabilities. *Journal of Disability Studies*, 27(2), 201-212.
2. Brown, A. (2021). Policy changes for inclusive public spaces: A case study on accessibility for the deaf community. *Urban Studies Journal*, 43(3), 411-426.
3. Chen, X., Yang, Y., & Zhang, H. (2024). Inclusive design principles for public spaces: Addressing hearing disabilities. *Journal of Urban Planning*, 36(5), 499-510.
4. Dalton, D. S., Cruickshanks, K. J., Klein, B. E. K., Klein, R., Wiley, T. L., & Nondahl, D. M. (2003). The impact of hearing loss on quality of life in older adults. *Journal of Aging Health*, 15(3), 494-508.
<https://doi.org/10.1177/089826430301500301>
5. Garcia-Fernandez, J., Martinez, E., & Rodriguez, M. (2019). The role of visual information systems in enhancing accessibility for individuals with hearing disabilities. *Disability Studies Quarterly*, 39(4), 521-535.
6. Haynes, S. (2014). Effectiveness of communication strategies for deaf or hard-of-hearing workers in group settings. *Work*, 48(2), 193-202.
<https://doi.org/10.3233/wor-131612>
7. Johnson, K., & Walker, P. (2020). Assistive technologies and visual alerts for the hearing impaired: A systematic review. *Technology in Society*, 62, 101295.
<https://doi.org/10.1016/j.techsoc.2020.101295>
8. Kisch, S. (2007). Disablement, gender, and deafhood among the Negev Arab-Bedouin. *Disability Studies Quarterly*, 27(4).
<https://doi.org/10.18061/dsq.v27i4.45>
9. Lersilp, T., & Lersilp, S. (2019). Use of information technology for communication and learning in secondary school students with a hearing disability. *Education Sciences*, 9(1), 57.
<https://doi.org/10.3390/educsci9010057>
10. Lesch, H., Burcher, K., Wharton, T., Chapple, R., & Chapple, K. (2019). Barriers to healthcare services and supports for signing deaf older adults. *Rehabilitation Psychology*, 64(2), 237-244.
<https://doi.org/10.1037/rep0000252>
11. Thompson, J., & Williams, D. (2022). Inclusive urban planning for the deaf: A review of current challenges and potential solutions. *Journal of Urban Studies*, 48(2), 230-250.
12. Turunen-Taheri, S., Carlsson, P., Johnson, A., & Hellström, S. (2018). Severe-to-profound hearing impairment: Demographic data, gender differences, and benefits of audiological rehabilitation. *Disability and Rehabilitation*, 41(23), 2766-2774.
<https://doi.org/10.1080/09638288.2018.1477208>
13. World Health Organization. (2021). Deafness and hearing loss. World Health Organization.
<https://www.who.int/news-room/fact-sheets/detail/deafness-and-hearing-loss>

Thanks!

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