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## Provision of Library Services to Visually Impaired Persons in Central University Libraries of North India

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The paper examines provision of library and information services to the visually impaired persons in Central University libraries of North India. It looks into the various issues that are involved in the provision of library and information services to the visually impaired students in the libraries. The study employed survey method of research and data was collected from chief librarians of six central university libraries namely, Jamia Millia Islamia, Jawaharlal Nehru University, University of Delhi, Aligarh Muslim University, Banaras Hindu University and Babasaheb Bhimrao Ambedkar University by using a structured questionnaire. Findings revealed that all the libraries have provision of services to visually impaired persons but there is a lack of dedicated budget and accessibility policy for such users in the libraries. Aligarh Muslim University Library has the highest collection of braille books and daisy books followed by Delhi University library. Services such as audio book recording, transcription service and scanning assistance are available in most of the libraries. Further, it is revealed that the libraries of JNU and BBAU are fully accessible to the visually impaired persons, while the other university libraries lack some such arrangements. However basic facilities such as ramps and accessible washrooms are available in all the libraries. The study also revealed the barriers faced by the librarians in providing the special services to visually impaired persons. It is found that inadequate funds is the major barrier in provision of library services to visually impaired persons followed by the lack of reading materials in accessible format and lack of trained staff to serve such users.

**Keywords:** *Library Services, Visually Impaired, Central Universities, Assistive Technology, Accessible environment.*

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## 1 INTRODUCTION

Libraries are one of the important segments of any academic institution that work as centres of information resources and services. They provide a number of opportunities of research, learning and recreation to the academic community<sup>1</sup>. They work as service organizations which facilitate all their users without discrimination, including persons with special needs as well. Statistics shows that availability of accessible resources is less than 7% in developed countries and it is about less than 5% in developing countries. Visually impaired people (VIPs), therefore, are at greatest risk of being socially excluded as a result of poor access to information<sup>2</sup>. The Standard Rules on the Equalization of Opportunities for Persons with Disabilities<sup>3</sup> describe the necessity of libraries in providing inclusive services to the disabled. IFLA/UNESCO Public Library Manifesto, 1994<sup>4</sup> mentioned that library services should be open to all persons regardless of their race, creed, gender, physical ability, social status and economic status. Specific services and materials must be provided for those users who cannot, for whatever reason, use the regular services and materials. Since information is a primary and fundamental right of any person especially the visually impaired. IFLA (2005) Professional Reports: 86 issued a guideline titled “Libraries for the Blind in the Information Age – Guidelines for development”<sup>5</sup> provides a guideline for the developing effective library and information services for the people with print disabilities and the blind.

Visually impaired, is a general term used to describe people who are partially sighted or completely blind<sup>6</sup>. In other words, the visually impaired are persons who are blind or have a low vision. In this paper visually impaired persons is applied to both sets of people, who are completely blind and to those who can partially see. Differently abled students (including visually impaired) suffer and face challenges in their attempt to access library facilities and information in their academic pursuit. Some of these challenges include social discrimination and cultural bias. The library facilities in some academic institutions are designed without taking into consideration the needs of these students and thus limit their access to information in libraries which affect their information seeking behavior. Advances in Information and Communication Technology (ICT), have made information now available in different formats that can be accessed through various media<sup>7</sup>. According to Bhardwaj, Shukla & Kamboj<sup>8</sup> developing an efficient library service for print-disabled people is extremely important, because there are significantly

fewer books available commercially in accessible formats compared to what is published in print for the general public. The need to build collections in alternative formats and make them available for readers who are unable to browse shelves makes it necessary to develop special services. Some of these alternative formats in which information is available to students with visual impairment include:

- Braille books
- Talking books
- Talking newspapers
- Large printed materials
- Screen magnifier
- Screen reader
- Voice recognition software

There are about 314 million visually impaired people globally with 45 million totally blind. According to Census 2011, India is home to 26,810,557 (26.8 millions) disabled persons which constitutes 2.21% population of the country. 5 million persons are visually impaired (disability in seeing). There is no country in the world today where the affliction of blindness is as widespread as in India, nor where the ratio of blindness to population is so high. One out of every three blind persons in the world lives in India <sup>9</sup>.

## 2 REVIEW OF LITERATURE

Bhue, Bhoi and Ranganadham <sup>10</sup> discussed the role of university libraries in providing information services to the students with disability, their legal framework and guidelines of different libraries. They have further given a proposal for library services to differently abled persons to the university libraries of Odhisa as per the guidelines given by IFLA. In their proposal they mentioned physical access, access to materials and services, availability of special media formats for persons with disability and cooperation with disability organizations and individuals.

Sanaman <sup>11</sup> aimed at analyzing the role of the institutions/libraries serving the people with disabilities in information storage and access in the digital environment for the people with disabilities in the NCR region. The findings

revealed that there are sufficient information services and facilities available in the libraries for the people with disabilities. All the libraries serving the blind/vision impaired users have Internet facility for the users while majority of libraries serving the deaf community and some libraries serving the locomotor impaired users do not have Internet facility. The libraries have the specialized staff for serving the users with disabilities and there is a provision of training programmes for the library professionals in majority of the libraries. The policy document that describes the services for people with disabilities is available in all the libraries.

Eskay and Chima <sup>12</sup> conducted a study on library services for the blind and physically challenged in Nigerian universities with particular reference to the University of Nigeria, Nsukka (UNN). Results of the study showed that none of the libraries surveyed has braille books, talking newspapers and assistive technologies. The only materials that were available, were audio books which were also not acquired to serve the visually impaired as most of the audio materials came with textbooks and encyclopedia that the libraries acquired. The study suggested some strategies to improve library and information services to the visually handicapped in Nigeria which includes adequate funding to libraries and investment in Assistive Technologies.

Singh and Moirangthem <sup>13</sup> conducted a study to explore information needs and information seeking behavior of visually impaired people and present scenario of library services being provided to them. They suggested that serious efforts need to be done by the libraries/institutions/NGOs for these neglected groups of special people in fulfilling their information needs as there were very insufficient library services available for them. They further suggested that more and more studies on this area should be undertaken by the LIS professionals so that libraries could develop need-based collections/services to this category of users.

Ayiah <sup>14</sup> conducted a study to assess the provision of information and library services to visually challenged students (VCS) in university of Ghana. Respondents indicated that they were dissatisfied with the provision of library and information services for VCS at the University of Ghana. The majority of the respondents indicated using print documents at their risk due to the fact that other formats are not available for them to use. The findings affirmed the need for specialized training for librarians on how to serve VCS.

Access to information is major problem for the visually impaired in India.

A brief review of literature made above has acknowledged that, lack of specialized equipment and teaching or learning materials; insufficient specialist staff for special needs and limited education opportunities are common problems in the provision of services to visually impaired persons. Availability and adequacy in aspects such as assistive technologies, human resource, and accessibility of technical infrastructures like, computer labs, internet web pages and the like needed to be examined at this context. The concern of this study is to investigate the availability, the quality and the quantity of appropriate services offered by the libraries to visually impaired persons.

### 3 OBJECTIVES OF THE STUDY

The major objectives of the study were to:

- examine the physical layout of university libraries in respect of accessibility to visually impaired persons;
- study the information resources and services provided by university libraries to visually impaired persons;
- find out the level of assistance and Assistive Technologies available in libraries for the visually impaired persons;
- identify the challenges experienced by the libraries in providing services to visually impaired persons; and
- suggest measures for improvement of resources and services.

### 4 METHODOLOGY

This study is based on survey method. A structured questionnaire was developed for the purpose of data collection and distributed personally to the librarians of following prominent central universities of North India :-

1. Jamia Millia Islamia, New Delhi
2. Jawaharlal Nehru University, New Delhi
3. University of Delhi, New Delhi
4. Aligarh Muslim University, Aligarh
5. Banaras Hindu University, Varanasi
6. Babasaheb Bhimrao Ambedkar University, Lucknow

The viewpoints of the librarians were also sought to explore the challenges faced in the provision of library services to the visually impaired people. Collected data have been carefully analyzed and put into the following successive tables with their interpretations.

## 5 DATA ANALYSIS AND FINDINGS

**Table 1 Provision of services to Visually Impaired Persons**

Name of University	Yes	No
Jamia Millia Islamia	✓	-
Jawaharlal Nehru University	✓	-
Delhi University	✓	-
Aligarh Muslim University	✓	-
Banaras Hindu University	✓	-
Babasaheb Bhimrao Ambedkar University	✓	-

Major objective of the study was to know about the provision of library and information services to visually impaired persons in central universities which is shown in table 1. It is revealed from the table that all of the universities surveyed have provision of services to visually impaired persons.

**Table 2 Dedicated budget for Visually Impaired Persons**

Name of University	Yes	No
Jamia Millia Islamia	-	✓
Jawaharlal Nehru University	-	✓
Delhi University	✓	-
Aligarh Muslim University	-	✓
Banaras Hindu University	-	✓
Babasaheb Bhimrao Ambedkar University	-	✓

Table 2 presents the availability of dedicated budget for the visually impaired persons in the libraries which is important for providing specific services to these persons. It is very distressful that none of the libraries except Delhi University library has a dedicated budget for the visually impaired persons. In fact it is a matter of great concern that without any dedicated and sustained budget how these libraries are supposed to meet the diverse needs of visually impaired persons.

**Table 3 Written Policy for Visually Impaired Persons**

Name of University	Yes	No
Jamia Millia Islamia	-	✓
Jawaharlal Nehru University	-	✓
Delhi University	✓	-
Aligarh Muslim University	-	✓
Banaras Hindu University	-	✓
Babasaheb Bhimrao Ambedkar University	-	✓

Policy is a set of principles, rules and guidelines formulated by an organization to achieve its objectives and goals. A written policy sets standards for the employees to be able to verify if they are meeting those standards. Considering this an attempt has been made by the researcher to know whether the libraries have a written policy for visually impaired persons, which is shown in table 3. It is revealed from the table that none of the libraries surveyed have formulated or adopted any policy for visually impaired persons except Delhi University Library.

**Table 4 Areas Covered in the Policy**

Areas covered in the policy	JMI	JNU	DU	AMU	BHU	BBAU
Access into the building	-	-	✓	-	-	-
Access within the building	-	-	✓	-	-	-
Signs and guiding	-	-	✓	-	-	-
Availability of resources in alternative format	-	-	✓	-	-	-
Availability of assistive technologies	-	-	✓	-	-	-
User needs research	-	-	✓	-	-	-
Staff training	-	-	✓	-	-	-
Promotional / Marketing strategies	-	-	✓	-	-	-
Delivery of resources to the housebound	-	-	✓	-	-	-
Relations with other agencies for the Differently abled	-	-	✓	-	-	-

After knowing the availability of a written policy for visually impaired persons next obvious was to identify the areas covered in the policy. As it is revealed in the previous table that only Delhi University library has a written policy for visually impaired persons. In this table areas covered in the policy are identified. It can be seen that the policy adopted by Delhi University library is very comprehensive encompassing almost all the elements necessary for providing a barrier free environment to visually impaired persons from physical access to the library to availability of resources in alternative formats and availability of assistive technologies.

**Table 5 Number of Visually Impaired Users in Library**

<b>Name of University</b>	<b>No.</b>	<b>%</b>
Jamia Millia Islamia	12	1.84
Jawaharlal Nehru University	110	16.79
Delhi University	250	38.17
Aligarh Muslim University	83	12.67
Banaras Hindu University	200	30.53
Babasaheb Bhimrao Ambedkar University	00	00
<b>Total</b>	<b>655</b>	<b>100</b>

Table 5 shows the number of visually impaired users in the library. It can be seen that there are collectively 655 visually impaired users in all the 6 Central University libraries surveyed. Delhi University has maximum number of visually impaired users 250 (38.17%) followed by Banaras Hindu University 200 (30.53%) and Jawaharlal Nehru University 110 (16.79%). Jamia Millia Islamia has the minimum number of visually impaired users 12 (1.84%) while Babasaheb Bhimrao Ambedkar University has no visually impaired users currently.

**Table 6 Information Sources Available for Visually Impaired Users in the Library**

<b>Name of University</b>	<b>Braille Books</b>	<b>Daisy Books</b>	<b>Electronic Text</b>	<b>Audio Books</b>
Jamia Millia Islamia	-	300	-	-
Jawaharlal Nehru University	382	✓	✓	✓
Delhi University	1200	1900	2000	350
Aligarh Muslim University	2000	3600	600	✓
Banaras Hindu University	-	-	-	527
Babasaheb Bhimrao Ambedkar University	✓	✓	✓	✓

The needs of people with visual impairment are generally the same as those of sighted people. However, people with visual impairment cannot use conventional print materials. They depend on alternative formats such as braille books, talking books and e-books etc. Therefore, libraries serving visually impaired persons must acquire materials in accessible formats other than traditional print. Table 5 shows the availability information sources in various accessible formats in the libraries

It is revealed that AMU Library has highest number of braille books, i.e. 2000 followed by Delhi University Library and JNU Library with 1200 and 382 braille books respectively, while the number of braille books in BBAU Library is not provided by the librarian and in JMI and BHU there are no braille books. Similarly, in daisy books AMU has highest number of daisy books, i.e. 3600 followed by Delhi University and JMI Library with 1900 and 300 daisy books respectively, while the number of daisy books in JNU and BBAU is not revealed. In terms of availability of resources in multiple accessible formats, libraries of JNU, DU, AMU and BBAU have information sources available all the four formats. While JMI possess a collection of daisy books only and in BHU only audio books are available those too are very less in numbers.

Table 7 Services Available for Visually Impaired Users in the Library

Services	JMI	JNU	DU	AMU	BHU	BBAU
Personal Reader Service	-	✓	-	-	-	-
Braille Production	✓	✓	✓	-	-	✓
Audio Books Recording	✓	✓	✓	✓	✓	✓
Computer Training Service	-	✓	-	-	✓	✓
Scanning Assistance	✓	✓	-	✓	✓	✓
Resource Sharing/Inter Library Loan	✓	✓	✓	-	-	-
Transcription Service (Reformatting of document to other accessible format, Braille or Digital)	-	✓	✓	✓	✓	✓

Special services available for visually impaired students in libraries are shown in Table 6. It is found that audio book recording is the most popular service among university libraries as it is available in all the libraries followed by transcription service which is also available in all the libraries except JMI library. While university wise analysis showed that JNU Library provides maximum number of special services to visually impaired persons from personal reader service to transcription service followed by BBAU.

**Table 8 Assistive Technologies Available for Visually impaired Users in the Library**

Assistive technologies	JMI	JNU	DU	AMU	BHU	BBAU
Scanner	✓	✓	✓	✓	✓	✓
e-book reader	✓	✓	-	-	-	✓
Talking Calculators	✓	✓	-	✓	-	✓
Tape Recorder	-	✓	-	✓	✓	-
Braille Embosser	✓	✓	✓	✓	-	✓
Magnifying glasses	✓	✓	-	-	✓	✓
Refreshable Braille Display	-	✓	-	✓	-	✓
Reading Pen	-	✓	-	-	-	✓
Tactile Image Enhancer	-	✓	-	-	-	✓
Braille keyboard overlay	-	✓	-	✓	-	✓

Visually impaired persons need to be equipped with the right products and services to help them become more independent and to be better supported in satisfying their information needs. They need to be ensured they have the same expectations, opportunities and outcomes as other library users. To address these concerns there needs to be better deployment of assistive technologies. Table 7 reveals the availability of different assistive technologies for visually impaired persons in university libraries. It is found that JNU has the maximum number of assistive technologies followed by BBAU and AMU. It can be noticed from the table that basic ATs such as scanner and braille embossers are available in all the libraries but more sophisticated and advanced assistive technologies such as reading pen, tactile image enhancer, refreshable braille display etc. are not available in most of the libraries.

**Table 9 Assistive Software Available for Visually Impaired Users in the Library**

Assistive software	JMI	JNU	DU	AMU	BHU	BBAU
Screen Reading Software	✓	✓	✓	✓	✓	✓
Screen Magnifying Software	✓	✓	-	✓	✓	✓
Reading and Writing Software	-	✓	✓	✓	✓	✓
Braille Translation Software	✓	✓	✓	✓	-	✓
Talking word processor	-	-	-	-	✓	✓
Optical Character Recognition Software	✓	✓	✓	✓	✓	-
Speech to Text Software	-	✓	-	-	-	✓

Like assistive technology hardware assistive software also holds drastic importance to visually impaired persons. These software helps the visually impaired persons in reading the text on the screen of computer or even the printed text OCR. Software such as talking word processor and other speech to text software assist them in the writing process, without which any research and academic activity is almost impossible. Table 8 reveals the availability of different assistive software in the university libraries. It is found that screen reading software are available in all the libraries. Screen magnifying software, reading and writing software, braille translation software and optical character recognition software are also available in all the libraries except one which are DU Library, JMI Library, BHU Library and BBAU Library respectively. While the university wise analysis revealed that libraries of BBAU and JMI have maximum number of assistive software followed by AMU and BHU.

**Table 10 Arrangements Made to Create Accessible Environment for Visually Impaired**

<b>Arrangements</b>	<b>JMI</b>	<b>JNU</b>	<b>DU</b>	<b>AMU</b>	<b>BHU</b>	<b>BBAU</b>
Wide enough space between bookshelves	-	✓	-	-	✓	✓
Ramps	✓	✓	✓	✓	✓	✓
Wider doorways/Automatic doorways	-	✓	-	-	-	✓
Onsite parking	-	✓	-	✓	✓	✓
Elevators/Lifts	✓	✓	✓	-	-	✓
Accessible washrooms	✓	✓	✓	✓	✓	✓
Use of signage	✓	✓	✓	-	-	✓
Orientation programs	-	✓	✓	-	-	✓

Creating a physically accessible environment within the library is of utmost importance to the visually impaired persons because without that all resources, services, assistive technologies and assistive software are useless. Therefore an attempt has been made by the researcher to find out the arrangements made by the university libraries for creating a physically accessible environment in the library which is shown in table 10. It is found that the library of JNU and BBAU are fully accessible to the visually impaired persons, while the other university libraries miss some arrangements. However basic facilities such as ramps and accessible washrooms are available in all the libraries.

Table 11 Training to Users in use of Assistive Technologies

Name of University	JMI	JNU	DU	AMU	BHU	BBAU
Inadequate funds	✓	✓	✓	✓	✓	✓
Lack of reading materials in accessible format	✓	-	✓	✓	✓	✓
Lack of trained staff	-	✓	✓	✓	✓	-
Lack of assistive technologies	-	✓	✓	✓	✓	-
Lack of awareness	-	-	✓	-	-	✓
Negative attitude of library staff	-	-	-	-	-	-

Assistive technology is most successful when both the user and their providers understand the purpose of technology, are proficient in operating its relevant features and confident in their ability to use it. Some assistive technologies are simple and intuitive, but many incorporate numerous powerful features. Learning to use these features can often be overwhelming, intimidating, and frustrating. At that point, the technology itself can become a barrier. Once an appropriate AT is identified, it's important that the user understands what it does and know how to operate the features relevant to their needs. Considering the importance of training librarians were asked about the provision of training in the use of assistive technologies in their libraries. It is found that all the university libraries have provision of training in their libraries. JNU Library is at forefront in providing training to users in use of assistive technologies. It has provision for training each time a new technology is introduced or a new user is enrolled and also when needed by the existing users.

An attempt has been made by the researcher to find out the barriers faced by the librarians in providing the special services to visually impaired persons, which is shown in table 12. As it is mentioned above in table 2 that none of the university libraries has a dedicated budget for visually impaired persons except Delhi University library which is visible in this table. As remarked by the librarians, inadequate funds is found to be a major barrier in provision of library services to visually impaired persons followed by the lack of reading materials in accessible format and lack of trained staff. Negative attitude of library staff is not considered as a barrier by any of the librarian.

## 6 SUGGESTIONS

- Libraries must fix a certain amount for visually impaired users in their budget.
- Many publishers are now publishing books in accessible formats along with traditional print, so libraries need to acquire new books from such publishers.

- Libraries should subscribe to the Sugamya Pustakalaya an online library for visually impaired persons. It is poised to become the largest collection of over 3,34,000 books in accessible formats in India. Library offers its entire collection to the member libraries for their visually impaired students.
- Libraries must cooperate with the associations and agencies working for the visually impaired. They are likely to be on top of the latest vision aids and technologies and are already providing training to clients or assisting in troubleshooting adaptive devices. There are substantial opportunities for partnership in supporting adaptive technologies and understanding consumer needs.

## 7 CONCLUSION

The results presented in this paper allowed us to better understand that how the university libraries are developing a physically accessible environment for visually impaired persons and supporting them with special services and assistive technologies. In particular it can be concluded that these libraries are trying hard enough to accommodate the visually impaired persons through providing access to information in different accessible formats, Assistive technologies and training in the use of these assistive technologies. Results showed that not all but some of the libraries are providing a comprehensive accessible environment to visually impaired persons, but the basic facilities such as ramps and accessible washrooms are available in all the libraries. In a nutshell, the results described in this paper demonstrate that there is still lot of room for the improvement as these libraries lack dedicated budget and accessibility policy for guiding the activities of the library.

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