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RESEARCH ARTICLE

Listening to the information needs of visually impaired users and implications for the libraries

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Abstract: The study is pursued with the purpose of understanding the information-seeking behaviour of visually impaired users in Kashmir division of Jammu and Kashmir (J&K) Union Territory (UT). The main objectives of the study were to know the use of the library and the perception of library among visually impaired users. The data was collected through a schedule and was analysed using quantitative techniques. In total, 63 persons were identified as visually impaired, but only 58 responded to the schedule. In order to fulfil various information needs, the users are enquired about different sources consulted. The users have found many print and electronic sources in the libraries but, at the same time, suggested that there should be a facility for conversion of text from print to electronic format in the library. Furthermore, the users are using the various library services but the availability of few special facilities are not being reported by the users. Although, 74.1% of users are able to work with compurters, 70.7% suggested that more awareness programmes should be conducted by the libraries. Since this special group of users is often forgotten, it is important to know what they use and what they need.

Keywords: Information literacy, computer literacy, information seeking behaviour, visually impaired library users.

INTRODUCTION

Information required by each individual in this world and this has become one of the basic needs of human beings. Information is required for variety of purposes and is compulsory for the socio-economic development of the societies. Similarly, information is also needed by visually impaired persons as well to survive in the world. However, the information required by the visually impaired persons is variable, and it must be available in accessible and usable formats. Although visually impaired persons are a part of our society, we have not been able to provide them with the required information due to various reasons. Many libraries have set up separate sections devoted to visually impaired persons. However, there is much more that needs to be done to meet their specific requirements (Kori & Mulla, 2022).

Visually challenged persons have varying degrees of sight loss eventually leading to the diversity of information needs. So, libraries must consider procuring different kinds of resources in varied formats. After acquiring resources, libraries have to think about searching for relevant information. The libraries, thus, require an ample amount of time to process the various resources so that they become easily accessible to visually impaired library users. Visually impaired users find it difficult to locate materials in libraries without assistance. The library professionals must cater to changing information needs and formats. However, with Information Communication Technology (ICT) and adaptive technology, the retrieval and access to information has greatly enhanced (Appiah, 2017).

Visual impairment

The term visual impairment is used for persons who have limited range of sight and focus which cannot be easily corrected with spectacles. Persons who require special lighting to be able to see, or have blurred vision, or have

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tunnel vision also come under this category. Some visually impaired persons need assistive devices, while others require specialised spectacles, Braille or Large Print so that they can see.

Information needs of blind and visually impaired persons

Visually impaired persons require material in a variety of formats like large print, audiobooks, e-books, talking books and Braille. The information needs of visually impaired persons vary based on their level of study, age and degree of impairment. Apart from this, the needs are mostly specific to particular situations required over a certain period. Over the years, it has been seen that visually impaired people mostly prefer audiobooks and DAISY books. Libraries must keep track of their information needs and try to procure such kind of resources. Apart from the resources, the libraries have to set up the infrastructure, including computers, scanners, and other gadgets like DAISY players and magnifiers. The libraries also need to either employ trained staff who can serve the visually impaired in an efficient way or train the available staff for the services to be provided to the visually impaired persons.

Although the internet has helped in making the resources accessible, libraries in the global south have a long way to go in addressing their specific needs. There is a need to shift from traditional services and print resources to electronic services and electronic resources. Further, the role of library professionals has also been enhanced with the introduction of Information Communication Technology (ICT) and the internet (Bamidele, 2021).

The manner and special way of meeting the information needs have to rely on sources and assistance outside the regular information resources available in the library. Consequently, the information needs of visually impaired students go through a series of additional steps before they are met with and may require technological devices for effective service delivery. They should ensure the appropriate assets, like information resources, space, services and ICT infrastructure, to make information accessible to the visually impaired.

Despite variations in educational backgrounds and living conditions of visually impaired persons, decision-makers, educational administrators, policymakers, school administrators, parents, librarians, and information professionals should work together with a common vision to achieve equal accessibility for the blind and visually impaired people to information, with the use of adaptive technology and formulate policies which will prove helpful in fulfilling the information needs of visually impaired people. Librarians, as information providers, must cater to the special information needs of visually impaired people to keep them abreast of the latest information. Libraries should make efforts to provide inclusive services to all users, including people with disabilities. We need to formulate policies regarding the provision of library services to people with disabilities, providing adequate budgets and staff training. In addition, practical measures are required in each important building in society, like constructing buildings with ramps and maintaining working lifts, acquiring Braille and large print information resources in the libraries, as well as providing assistive equipment (Majinge & Stilwell, 2013).

LITERATURE REVIEW

Theoretical studies on various models of information seeking behaviour

Most studies of how people look for information were built on a framework that was first made by Paisley, and then improved by Allen and others. They wanted the area of communication research to be more unified and consistent. The old way of looking for and using of information was to focus on how to get and handle information. Wilson (1981) developed a model of how people look for information. In this model, people share information with each other. During the search process, if a user finds information that could help someone else, he sends it to that person. The model describes how a person looks for information based on what they think they need. He asks for information from official or unofficial systems, services, or sources to meet this need. His

requests may be met with or not, affecting whether useful information can be found. If he finds what he needs, he uses the knowledge he found. If he doesn't find what he needs, he has to start looking again. Wilson changed his model after study many different fields, such as decision-making, psychology, innovation, health, communication, and consumer research. During the same decade, Wilson (1999) looked at the information search and seeking behaviour model to find out how communication and information behaviour relate to seeking and looking for information in an information retrieval system.

Krikelas (1983) updated the model by incorporating the findings of user studies. He has shown that his plan is based on three important activities: getting information, looking for information, and giving information. During the same time, Ellis (1989); Ellis *et al*. (1993); and Ellis & Hugan (1997) came up with a general model of how people look for information. They did this by looking at how social scientists, researchers, scientists, chemists, and engineers look for information. Ellis's model shows that there are six different ways to look for information: starting, chaining, browsing, differentiating, watching, and extracting. Brown (1999) invented a general model of how people look for knowledge. In this model, several aspects of how people look for information are projected onto an organisational and behavioural framework. Likewise, Marchionini (1997) came up with a model of how people look for information that was made specifically for the electronic world. In this model, the process of getting information is broken down into eight steps.

While these models were being framed, the descriptive studies were going on in various disciplines and the models were being applied to different users, like students, scholars, and faculty members. Among various categories, researchers also tried to understand the information-seeking behaviour of visually impaired persons.

Studies on information needs of visually impaired users

Access to information is now a basic need of human beings. Information seeking is a form of human behaviour that involves seeking information by actively examining information sources or information retrieval systems to satisfy the information need or to solve a problem. It is needed for people of all walks of life for socio-economic development, decision-making, and a wide variety of purposes. Information is essential to all human beings, and the aim of libraries is to provide the right information at the right time in the right format to its patrons regardless of race, religion, age, nationality and language. This core function includes the provision of information to people with disabilities**.** Arowosaye & Bakare (2022) in their study concluded that visually impaired students have the same information needs to meet as any other student. Bagandanshwa (2006) emphasises that all persons have a right to information, regardless of disability. He maintains that information is power because it is the source of knowledge and facts. The World Health Organization (n.d.) declares that around 2.2 billion people are visually impaired worldwide, having a near or distant vision impairment. However, each individual in the society has equal rights, and we cannot deny any particular group any specific human right. Equal right implies that the needs of each individual is of equal importance and that those needs must be the basis for planning**.** Library and information services must be equally hospitable to the visually impaired and those without this impairment (Davies, 2007). It is crucial for the visually impaired through the use of information. Just like the sighted, information use will ensure that they partake in modern society's processes through the ability to identify, interpret, process, disseminate, use, and reuse information in order to make informed choices and reduce uncertainties (Singh & Moirangthem, 2010).

Students must acces to information from a good resource to excel in their educational pursuits. In a study conducted by Katz (2007), it was observed that visually impaired students of university experience varying degrees of sight loss that may necessitate diversity in the level of their information needs and the types of library resources required to cater for them. In managing their workload, students often experience difficulties in accessing information to suit their needs in these libraries**.** Visually impaired students require specialised materials to help accessing and seeking relevant and useful information (Hill, 2013). This means that extra time is required for information processing and transcription from information sources by visually impaired students. It may

become difficult or impossible for visually impaired students to find materials in the library without specialised assistance. Despite the special needs, researchers have consensus that access to library services by students with disabilities is not yet fully available, especially in countries in the global south. It is imperative that this proactive provision of library services be extended to the students with disabilities taking into consideration their special needs. A study by Smith & Rosenblum (2013) revealed that the students with visual impairments find themselves in a condition that triggers the need to seek and use information. For example, students constantly need information to write assignments, essays, tests and other academic related information. They further stated that visually impaired students needed specialised tools like computers, keyboards, and software to generate required information during the lecture time.

Kumar & Sanaman (2015) conducted a study to analyse the challenges faced by blind/ vision-impaired users during web access to leading academic and special libraries of Delhi, India. The result clearly stated that there are barriers faced by visually impaired users in the libraries of Delhi during their web access**.** Therefore, Kumar & Sanaman (2015) recommended three types of web-based resources that the libraries can offer to their users. These include access to the Internet, access to subscription databases and a library's web pages/website which need to be accessible to people with disabilities**.** Abdelrahman (2016) studied the availability of library and information services and support to visually-impaired and blind students at the University of Khartoum in Sudan. The study pointed out the specific challenges these students faced in meeting their information needs. Appiah (2017) reported that the neglect to meet the information needs of visually impaired students has negative consequences in improving their academic performance as well as the future development and benefit of society. The study was carried out among visually impaired students from the University of Ghana, Legon and the University of Education, Winneba. The results reveal that the students used formal and informal methods to seek information. The study also noted that information presented in the printed formats has been a hurdle for students. However, the study disclosed that assistive technologies have helped them in overcoming many problems. Fatima & Kumari (2017) revealed the information-seeking behaviour of visually impaired students in Maulana Azad Library, Aligarh Muslim University (AMU), that most of the users seek information for their career development. The highest percentage of the users utilize audiobooks as an information source and find them fairly accessible but face difficulties also because of the lack of computers with screen reader software. More than half of the users are satisfied with the overall functioning of the library. A collaborative study by Aghauche & Udem (2018) investigated the utilisation of library and information resources by visually impaired primary school children in special education centres in southeast Nigeria. In a study of the convenience and accessibility of library services to students with disabilities, Phukubje & Ngoepe (2017) identified five library services offered to students with disabilities, which include computer training facilities, orientation and mobility, Braille production, low vision reading facilities, Braille and audio library services in order to meet their information needs. The paper by Alabi & Mutula (2020) aims to determine the state-of-the-art report of assistive technologies developed for people living with visual disabilities and those used in academic libraries around the world. However, computers, Assistive Technology (AT) and the web are developed to overcome the lack of access to non-print information and add value for persons who are visually impaired. Likewise, Ndlovu (2021) collected data through interviews with students with disabilities and Disability Rights Centre staff members. The paper aimed to explore the effectiveness of AT and assistive devices. The study revealed inadequate provision and a specific AT and assistive devices were inaccessible to visually impaired persons, thereby limiting learning.

Mutanga (2017) reviewed literature focused on students with disabilities in South Africa, while Hill (2017) carried out a content analysis of the library and information science literature on the same theme but focused on literature published from 2000-2010 around the world.

Arowosaye & Bakare (2022) conducted a study of the Federal College of Education (Special), Oyo, through a questionnaire. The study revealed that visually impaired students use audio newspapers and magazines, e-books, audiobooks and internet resources as well. A study by Kori & Mulla (2022) found that visually impaired students of Maheshwari School of Blind, Karnataka, India to be using library resources and services satisfactorily. All the

students faced difficulties while seeking information but informed that they often consulted library staff, friends, and teachers for required information. The majority of the students were found to be using audio-visual materials and assistive technologies. A survey was conducted by Adetoro (2015) to investigate the use of alternative formats and perceptions of information services to the visually impaired in Nigeria. The author reported that 112 out of 180, provided information related to the study. It also reported that Braille materials were being used to a greater extent by visually impaired persons. The researcher opines that much need to be done towards alternative formats and e-resources. Seyama *et al*. (2014) investigated whether the services provided by the University of KwaZulu-Natal on its Pietermaritzburg Campus were able to fulfil the information needs of blind students and those with visual impairements. According to this study, the information needs of blind students and those with visual impairments were not readily met because of the barriers to information-seeking processes. Among the barriers listed were computers in the library without suitable software, such as JAWS and ZoomText. Using survey methodology, Aghauche & Udem (2018) questioned 129 respondents, consisting of 125 visually impaired students and four librarians in South-East Nigeria. This study showed that visually impaired primary school students were making use of available resources to a limited extent due to the non-availability of resources in alternative formats.

Objectives of the study

The objectives of the study are as follows:

1. To determine the use of library resources and services by visually impaired students in Kashmir.
2. To understand the information needs of visually impaired students.
3. To gauge the availability of special facilities for visually impaired users in Kashmir.
4. To understand some information literacy skills of visually impaired users.
5. To propose the areas of improvement in libraries serving visually impaired users.

Scope

The study was confined to Kashmir Division of Jammu & Kashmir UT. A total of 63 visually impaired users were identified, but only 58 responded to the schedule making the response rate equal to 92.06%.

Table 1: Responses received

Male		Female	
No. of Respondents Contacted	Positive Response	No. of Respondents Contacted	Positive Response
48	46	15	12

METHODOLOGY

The survey method was used to achieve the objectives of the research. The research used purposive sampling keeping in view the low population of visually impaired users in hand. The visually impaired users were identified during a the National Seminar on Print Disabilities organised by the University of Kashmir, Srinagar. The majority of the responses were received from the visually impaired users who participated in the programme, while other responses were collected from Help Foundation, Inderhama, Srinagar. The first response providers proved helpful in identifying the other visually impaired users in the Kashmir Valley. After identifying the visually impaired users, the investigators interacted with them and tried to get the schedules filled with much caution since these specially-abled users need much of our attention. The response rate can be broken as detailed below:

Table 2: Category of visually impaired users

Male		Female	
Totally Blind	Low Vision	Totally Blind	Low Vision
34	12	5	7

Although the questionnaire would have served the purpose of the research, keeping in mind the difficulties of the visually impaired users in reading the printed text, schedules were framed. Initially, a few schedules were distributed among known visually impaired users as a pilot study so as to make necessary corrections in the schedule framed for getting the information from these users. The decision of selecting schedules as data collection tool proved right and neither the investigator nor the visually impaired users faced any difficulty in filling the schedules. The responses were collected from June to December 2022. The data collected was organised in MS Excel for analysis, and basic statistical techniques were applied to achieve the objective laid down for the study.

RESEARCH FINDINGS AND DISCUSSION

Gender

The study reveals that the majority of visually impaired users who responded to the schedule included males (79.31%) as against 20.69% female respondents. Similar results are found in the study of Adetoro (2015); Appiah (2017); Kori & Mulla (2022), who found that the majority of the respondents are male compared to female, while the results of Arowosaye & Bakare (2022) indicate opposite trend with the majority of users being female (54.3%) compared to males (45.7%).

Table 3: Distribution of the sample by gender

S. No.	Gender	Frequency	Percentage
1	Male	46	79.31
2	Female	12	20.69
	TOTAL	58	100.00

Age group

The study found that the majority (77.6%) of the visually impaired library users were of the age group 20-30 years followed by 31-40 years, similar to the findings of Adetoro (2015) wherein the majority of the visually impaired users (75.5%) were found to be between 21 and 39. However, as per the study of Arowosaye & Bakare (2022), the majority of the respondents (48.6%) were in the age group of 15-25.

Table 4: Distribution of the sample by age group

S. No.	Age group	Frequency	Percentage
1	Below 20 years	0	0
2	20-30	45	77.59
3	31-40	13	22.41
4	41-50	0	0
5	51-60	0	0
	TOTAL	58	100.00

Designation/ Status

Although different user group was considered for the research, the study revealed that the majority (56.9%) of the visually impaired users were students, while a some (6.9%) were working in different organisations, and another category were scholars (6.9%). However, a good number of them also included job seekers (29.3%).

Table 5: Classification of the sample by category

S. No.	Status	Frequency	Percentage
1	Scholars	4	6.90
2	Students	33	56.89
3	Working	4	6.90
4	Job Seeker	17	29.31
	TOTAL	58	100.00

Qualification

The users who responded positively were in the majority (39.7%) possessing post-graduation as their qualification, followed by undergraduates (29.3%) and graduates (25.9%).

Table 6: Distribution of the sample by educational qualification

S. No.	Qualification	Frequency	Percentage
1	Graduate	15	25.86
2	PG	23	39.66
3	PhD/MPhil	3	5.17
4	Undergraduate	17	29.31
	TOTAL	58	100.00

Visit to library

The visually impaired users who responded to the schedule were asked about frequency of visits to the library which revealed a gloomy picture as most of them were not using the library on a daily basis, but most were using it on a weekly basis (34.5%) while others visited library only when required (8.6%) or fortnightly (8.6%). Around 17.2% of users visited the library two or three times a week, while only 15.5% of users went to the library on a daily basis. In contrast, the results of Kori & Mulla (2022) reveal that all the users (100%) seek the information on a daily basis.

Table 7: Distribution of the sample by frequency of visit to library

S. No.	Visit to library	Frequency	Percentage
1	Daily	9	15.52
2	Two/ Three times in a week	10	17.24
3	Weekly	20	34.48
4	Fortnightly	5	8.62
5	Monthly	9	15.52
6	Use only when needed	5	8.62
	TOTAL	58	100.00

Sources consulted

When the visually impaired users were asked about sources consulted by them, most of them (87.9%) answered that they ask their colleagues, followed by their teachers (81.03%). However, there is also widespread consultation of textbooks (70.7%), and use of the internet (65.5%). Few are consulting professionals (32.8%), while radio

(25.9%) and TV (36.2%) are also used as sources of information. It was good to see that visually impaired users discuss things, and the same has become the source of information for 20.7% of users. However, the results of Kori & Mulla (2022) study reveal that all the users consult library staff (100%), discuss with friends (100%), and discuss with teachers (100%) in order to access the information. Likewise, the study conducted by Appiah (2017) reveals that 55.8% relied on colleagues for their information, 38.2% browsed the Internet, 36.7% of the respondents indicated radio as their source of acquiring information, and 14.7% consulted textbooks to acquire information.

Table 8: Type of sources often consulted

S. No.	Source	Frequency	Percentage
1	Textbooks	41	70.69
2	Radio	15	25.86
3	TV	21	36.21
4	Group discussion	12	20.69
5	Colleagues	51	87.93
6	Professionals	19	32.76
7	Teachers	47	81.03
8	Handouts/ Catalogues	5	8.62
9	Internet	38	65.52

Need

While ascertaining the information needs of visually impaired users, it was revealed that most of the users have academic information needs (94.8%) followed by employment information needs (84.5%). However, a good number of users (60.3%) have health information needs while global information needs (39.7%) and sports information needs (19%) also are part of the information needs of visually impaired users. Similarly, study conducted by Appiah (2017) reveal that 68 (100%) visually impaired students from the University of Education, Winneba and University of Ghana, Legon required academic information issues, 45.5% required employment information, and 42.6% required health information. Likewise, the information needs of the respondents of the Federal College of Education (Special), Oyo, ranged from personal development, to educational and financial matters as per the study of Arowosaye & Bakare (2022).

Table 9: Distribution of the sample by need of users

S. No.	Need	Frequency	Percentage
1	Academic Information Need	55	94.83
2	Health Information Need	35	60.34
3	Employment Information Need	49	84.48
4	Sports Information Need	11	18.97
5	Global Information Need	23	39.66

Purpose of visiting the library

Disclosing the information about the purpose of visiting the library, most of the users reported that they visit the library to update their knowledge (93.1%), followed by preparation for different competitive examinations (72.4%). Understanding the topics taught in the classroom is also noted by a significant number of users (65.5%). However, users (44.8%) were going to the library to use assistive technology as well. Few users went to the library in preparation for job interviews (12.1%), while others were writing their research papers/ thesis (8.6%), and only

5.2% were preparing to teach in their classes. On the other hand, Kori & Mulla (2022) found that all the users visited the library to use assistive technology (100%), read educational resources (100%), and prepare for examinations (100%). However, a study conducted by Appiah (2017) reveal that most visually impaired students (58.8%) seek resources for learning, followed by 36.7% and 35.2% of students to prepare for examinations and keep up with new knowledge, respectively.

Table 10: Purpose

S. No.	Purpose	Frequency	Percentage
1	To update knowledge	54	93.10
2	To Prepare for competitive examinations	42	72.41
3	To Prepare for job interviews	7	12.07
4	To write research papers/ thesis	5	8.62
5	To Plan and prepare for class where I teach	3	5.17
6	To understand the topics taught in the class where I study	38	65.52
7	To use assistive technology	26	44.83

Print sources consulted

Enquiring about the print resources consulted by the visually impaired users, they all consulted the books. The same is good for the libraries since all the content is not available in electronic format. However, they are using the books through different means like scanning with mobile phones/ scanners with the help of numerous applications, or asking others to read them the books. Dictionaries are also being used (15.5%), apart from encyclopaedias (6.9%). However, journals, dissertations, project reports and magazines were also used, each by 8.6% users. Only a meagre number of users consulted technical reports (3.5%) and newspapers (3.5%).

Table 11: Print sources consulted

S. No.	Print sources	Frequency	Percentage
1	Books	58	100
2	Journals	5	8.62
3	Bound Volumes of Periodicals	0	0
4	Dissertations/ Theses	5	8.62
5	Project Reports	5	8.62
6	Technical Reports	2	3.45
7	Magazines	5	8.62
8	Encyclopaedias	4	6.90
9	Dictionaries	9	15.52
10	Newspapers	2	3.45

Electronic resources used

With the advent of information technology, each source of information is finding a way to be available in other formats like electronic, audio and DAISY formats. The study discovered that audiobooks are mainly used (94.8%) by visually impaired persons, followed by DAISY books (56.9%) and e-books (46.6%). However, digitised books and online newspapers are also consulted by 36.2% and 17.2% of respondents, respectively. E-journals are being used by 8.6% of respondents, while e-databases and e-repositories are not being used by anyone, probably due to poor awareness among the users like in the study of Kori & Mulla (2022), indicating that the users are not having access to online databases. Regarding the use of audio resources, and e-books, Arowosaye & Bakare (2022) disclose that the audio resources and e-books were being used by the visually impaired persons in the Federal College of Education (Special), Oyo.

Table 12: Electronic resources used

S. No.	Electronic resources	Frequency	Percentage
1	Audio books	55	94.83
2	DAISY books	33	56.90
3	E-Books	27	46.55
4	E-Databases	0	0
5	E-Journals	5	8.62
6	E-Repositories	0	0
7	Digitised books	21	36.21
8	Online newspapers	10	17.24

Use of library services

Among the different services offered by the libraries, most of the users avail of book lending service (67.2%). The users are availing reference service (50%), OPAC (51.7%), internet facility (51.7%) and reprographic services (37.9%) as well. The visually impaired users are attending/ participating in the extension services, including seminars (44.8%), workshops (34.5%) and user awareness programmes (60.3%) conducted by the libraries, respectively. However, access to e-resources (25.9%) and remote access facility (17.2%) is yet to make an impact on visually impaired users. Current Awareness Service (CAS) (8.6%) and book bank facility (5.2%) are hardly used by visually impaired users, while as the services like inter-library loans and newspaper clipping service are not used at all, probably due to unawareness or non-availability of the service in the library. However, Kori & Mulla (2022) noted that while e-books are not provided to them in their library, audio-visual materials are provided.

Table 13: Library services used

S. No.	Library services	Frequency	Percentage
1	Reference Service	29	50.00
2	Book Lending Service	39	67.24
3	Reprographic Services	22	37.93
4	Current Awareness Service (CAS)	5	8.62
5	OPAC/ Web OPAC	30	51.72
6	Inter Library Loan	0	0.00
7	Internet facility	30	51.72
8	Access to E-Resources	15	25.86
9	Remote Access Facility	10	17.24
10	Book Bank Facility	3	5.17
11	Newspaper Clipping Service	0	0
12	Extension service of participating in conferences, seminars *etc*	26	44.83
13	Extension service of participating in workshops, training programmes *etc*	20	34.48
14	Extension service of participating in user awareness programmes, lectures *etc*	35	60.34

Availability of special facilities

When the users were asked about the ease of access to the library, most (77.6%) replied that the library is easily accessible. Lift facility (27.6%), and (29.3%) are also available in libraries, respectively. Searchable e-books (44.8%), searchable e-databases (36.2%), searchable e-journals (39.7%) and searchable digitised books (25.9%) are available in the libraries. Some have carved separate sections for visually impaired users (34.5%), while a Braille collection (25.9%) is also housed in some libraries. Job Access With Speech (JAWS)/ NVDA software (37.9%), Optical Character Recognition (OCR) scanners (34.5%), Kurzweil software (34.5%), Audiobooks / recordings (56.9%) and large print keyboards (32.8%) are also available while as 17.2% reported that libraries are lending Daisy Players and 34.5% reported that libraries have set up separate browsing centre for the visually impaired users. Daisy book compilation and lending of laptops/ iPads are not reported to have been initiated by any library, probably due to a lack of funding and trained manpower in libraries. Likewise, Kori & Mulla (2022)

found that 79.6% of users find it easy to access information and all the respondents stated that assistive technology is available in their library. In addition, the visually impaired students of Maheshwari School of Blind also revealed that they don't have elevators but informed that the building is friendly to specially-abled users. Similarly, the study of Arowosaye & Bakare (2022) reveals that internet resources were being used by visually impaired users.

Table 14: Distinctive facilities of library used by the respondents

S. No.	Special facilities for visually impaired	Frequency	Percentage
1	Easy access to library building including ramp	45	77.59
2	Lift facility	16	27.59
3	Wheelchairs	17	29.31
4	Separate section for visually impaired students	20	34.48
5	Braille collection	15	25.86
6	Job Access With Speech (JAWS)/ NVDA software	22	37.93
7	OCR scanners	20	34.48
8	Kurzweil software	20	34.48
9	Audio Books/ recordings	33	56.90
10	Large Print Keyboards	19	32.76
11	Daisy Books compilation	0	0
12	Searchable E-books	26	44.83
13	Searchable E-databases	21	36.21
14	Searchable E-journals	23	39.66
15	Searchable Digitized books	15	25.86
16	Lending of Daisy Players	10	17.24
17	Lending of Laptops/ iPads	0	0
18	Separate Browsing Centre for visually impaired students	20	34.48

Library orientation programmes attended

When the visually impaired users were asked about their participation in the library orientation programmes, 72.4% reported that they have attended the same, while 27.6% informed that they have not attended the programmes yet.

Table 15: Attendance in library orientation programme

S. No.	Library Orientation Programme	Frequency	Percentage
1	Attended	42	72.41
2	Not attended	16	27.59

Requirement of library orientation programmes in future

When the visually impaired users were asked whether they require the library orientation programme, all of them answered in conformity, indicating the importance of the library orientation programmes for this category of library users.

Table 16: Requirement of library orientation

S. No.	Requirement of library orientation in future	Frequency	Percentage
1	Require	58	100
2	Does not require	0	0

Computer literacy

Regarding computer literacy, it was revealed that a good percentage 74.1% of visually impaired users have knowledge regarding computers, while a few are yet to gain knowledge related to computers.

Table 17: Computer literacy

S. No.	Computer literacy	Frequency	Percentage
1	Yes	43	74.14
2	No	15	25.86

Place for accessing internet

When visually impaired users were asked about the place for accessing the internet, most of them (84.5%) informed that they access the internet from home, 51.7% access the internet from the library and only 15.5% access the same from their workplaces.

Table 18: Access to Internet

S. No.	Place for accessing internet	Frequency	Percentage
1	Library	30	51.72
2	Home	49	84.48
3	Workplace	9	15.52

Rating different parameters

The visually impaired students strongly agreed to the statement that they prefer electronic resources to print resources, as in the result of the study conducted by Appiah (2017) disclosing that the majority of the students (85.2%) preferred the electronic format for information instead of print (7.3%). The average results of the statement about whether library services are adequate, revealed that they agree to it. The findings contrast the study conducted on the users of Federal College of Education (Special), Oyo, which indicate that they were not satisfied with the services being provided to them (Arowosaye & Bakare, 2022).

Regarding whether library building/ infrastructure is well structured for visually impaired users, the overall rating reveals that they are satisfied with the infrastructure. Regarding the professional competence of the library staff, the users reported (average=3.78) that the staff is competent enough in handling the visually impaired users. The users also reported that the attitude of library staff is helpful towards visually impaired users.

The visually impaired users agreed to the statements that the training/ awareness programmes conducted by the library are useful for them and the library provided more accurate and authentic information than the internet. However, to the statement that they verify the information on the internet to determine its accuracy, the overall rating came out to be neutral.

Table 19: Rating different parameters

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Average	Overall rating
Prefer electronic resources to print resources	49	8	1			4.83	Strongly Agree
Library services are adequate for persons with visual impairment	7	42	4	5		3.88	Agree
Library building/ infrastructure is well structured for visually impaired users	4	42	7	5		3.78	Agree
Professional competence of library staff is good enough to handle visually impaired users	10	31	12	4	1	3.78	Agree
Attitude of library staff is helpful towards visually impaired users	15	32	8	2	1	4.00	Agree
Training/ Awareness programme conducted by library are useful for visually impaired users	25	17	11	3	2	4.03	Agree
Verify the information on internet to determine its accuracy	5	4	29	13	7	2.78	Neutral
Library provided accurate and authentic information than internet	15	22	20	1		3.88	Agree

Suggestions by the respondents

The visually impaired library users gave a few suggestions as well. Among them, many respondents (70.7%) were in favour of conducting awareness programmes more frequently so that usage of resources can be enhanced. Around 37.9% of users also suggested that library staff should be trained to handle visually impaired persons. However, most of them (25.9%) suggested that the facility for conversion of text to electronic format should be there in the library since most of the resources are in the print format, while 20.7% suggested to constructing separate cells for visually impaired users in the libraries.

Table 20: Respondents' suggestions for improvement

Suggestions	Frequency	Percentage
There should be separate cell for visually impaired users to cater to their need	12	20.69
There should be facility of conversion of text to electronic form in the library since most of the resources are in print format	49	84.48
Library staff should be trained to handle visually impaired users	22	37.93
Awareness programmes should be conducted frequently to enhance usage	41	70.69

RECOMMENDATIONS

After consulting many visually impaired students, the following recommendations can be been made:

1. Library policy

Institutions admitting special needs students should make efforts to frame a library policy favourable to visually impaired students. Such a policy should address issues regarding access to information, budgetary allocation, collection development and other privileges for visually impaired students. The recommendation is made due to the fact that around 84.5% of visually impaired library users suggested that there should be a conversion of text to electronic form in the library since most of the resources are in print format. These things cannot happen without a concrete policy since haphazard and uncoordinated efforts prevail in the absence of such policy.

2. Procuring assistive technology devices

Assistive technology devices play an important role in information technology and its use by visually impaired users. The library must procure computers with screen readers, magnifiers, scanners and other similar devices so as to assist the users. After procurement, library staff should be trained to operate them and be able to assist visually impaired users. The majority of the users under study prefer electronic resources instead of print resources, which demand procurement of assistive devices so that necessary conversion can be made in-house in the libraries.

3. Access to library

All the buildings on the campus should be made in such a way that wheel chair use and disable access are facilitated, including the library. All the drains should be covered, and all buildings should have ramps instead of stairs. This will help the students in reaching their destinations without any problem. Apart from this, the library should provide elevators/ lifts, automatic sensor doors and self-check-in and check-out of book facilities through RFID technology. This recommendation is based on the statement that "Library building/ infrastructure is well structured for visually impaired users" wherein the average of the response received was around 3.78, indicating that still much need to be done in this area so as to ensure that the resources can be accessed easily.

4. Improvement in access by way of conversion

Since most of the literature in libraries is in printed form, efforts should be made to convert printed texts into electronic formats. This requires special attention since we have ensured that each and every word in the printed form is correctly converted in the electronic format. For this, the files are saved in .pdf format or other easily readable formats. Likewise, DAISY books are formed which read text from the first page to the last. Apart from this, audiobooks are also preferred by visually impaired users. So, efforts need to be made to compile e-books, audiobooks, DAISY books as soon as any book is required by any visually impaired student since these are being preferred over printed books as per the findings of current study and previous studies.

5. Inter-library cooperation

Since the cost of providing equipment and resources for visually impaired students is very high, it is recommended that universities/ institutions which enrol specially-abled students need to establish collaboration and cooperation with organisations that provide services to these students. In this manner, some resources can be shared and used through inter-library cooperation by all the students, preventing duplication of investment of resources for digitisation *etc*.

6. Library orientation/ induction programmes

The library should conduct library orientation/induction programmes to create more awareness about the various types of special library services offered to the visually impaired users so that they don't feel like aliens in the presence of other students Around 70.7% of visually impaired users suggested that awareness programmes should be conducted frequently to enhance usage.

7. Appointing skilled staff and training

Skilled staff should be engaged so that they can assist visually impaired students. In case, the existing library staff members are unfamiliar with the services to visually impaired students, they should be sent for training programs and skill-enhancing workshops for upgrading their skills as 37.9% visually impaired users suggested that library staff should be trained to handle visually impaired users.

8. Partnership with NGOs and publishers

Although the partnership of libraries with NGOs and publishers is not seen in society, this component is extremely important so that prescribed study materials are made available in accessible versions for specially abled. In case, this happens, the students with special abilities will never face any difficulty in accessing the required information.

CONCLUSION

The study analysed the information-seeking behaviour of visually impaired students. The study reveals that most of them were not using the library on a daily basis, and most of them are asking their colleagues, followed by their teachers for information, indicating that most of them are dependent on others. In the modern era of information technology, when we claim to have much of the information at our fingertips, the information need of visually impaired users is not being fulfilled. Although most of the respondents were using books, it was disappointing to see that journals, dissertations, project reports and magazines were refered by only 8.6% of the respondents. Further, only a meagre number of respondents were using technical reports (3.5%) and newspapers (3.5%). The study reveals that audiobooks are mainly used (94.8%) by visually impaired users, followed by Daisy books (56.9%) and e-books (46.6%) as well. However, further research is required to ascertain the various resources available in different libraries. About 70.7% of respondents were in favour of conducting awareness programmes more frequently so that usage of resources can be enhanced, indicating that much needs to be done from the side of libraries. Interlibrary loans and newspaper clipping services are not used at all, probably due to unawareness or non-availability of the service in the library. The visually impaired students prefer electronic resources to print resources, but many electronic resources are not available to them and the use of available sources may also be rather restricted. Although most respondents were satisfied with the library building, lift facility and wheelchairs, the libraries must enhance their services so that visually impaired users can access the resources without any hindrance. Hence, we come to the conclusion that the information needs of visually impaired users are being fulfilled to some extent, but there are many hindrances as well. Libraries must provide innovative services to these specially-abled students so that they can prosper in society without suffering further.

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