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Analyzing The Awareness And Utilization Of Open Electronic Resources By The Library Users Of Select Medical Institutes In Tamil Nadu With Special Reference To Chennai And Kanchipuram District: A Study

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Abstract: The rapid integration of digital information technology has revolutionized the role of medical libraries from transforming them repositories for print-based collections to active portals for accessing the ever-expanding world of electronic information. This paper examines the use, purpose, frequency, satisfaction level and barriers to digital open access electronic resources in a medical institute library. A Survey method was employed to collect user data focusing on information use and perceptions of library services. It was found that e-books and e-journals were the most frequently used resources, underscoring growing dependence on digital platforms for academic learning and research. Users reported daily visits related to learning, updating subject knowledge, assignment preparation and career development. Satisfaction with library services was notably high, with the majority indicating that the library met their academic and professional needs. However, challenges such as slow internet service, lack of training in using electronic resources, limited availability of full-text journals, and outdated infrastructure, were identified as impediments to optimal resources use. Overall, the study concludes that although medical libraries remains indispensable for knowledge transfer and information-seeking, strategic interventions in infrastructure, user education, and resource availability are crucial in enhancing their performance in the medical education and scholarly communication.

Keyword: Open Electronic Information Resources, Digital Resources & Services, User Awareness, Satisfaction Level, Information Access Barriers.

1. INTRODUCTION

Digital technologies have significantly impacted the academic landscape, particularly in medical education. Medical libraries once limited to traditional print collections, are evolving into hybrid knowledge centers that integrating both print and electronic resources. Among these, open and digital electronic resources such as e-books, e-journals, theses, institutional repositories, and subject-specific databases play crucial roles in supporting teaching, learning, research, and professional development. These resources provide reliable access to medical information, excited for students, faculty, and researchers keeping pace with rapidly evolving of medical knowledge.

Recently medical libraries in India and worldwide have prioritized electronic resources. While these resources offer great potential, their effective use depends on infrastructure availability, digital literacy, and user awareness. Studies indicate that users frequently encounter obstacles such as internet connectivity issues, insufficient training in database use and limited access to full-text scholarly resources. Addressing these challenges is crucial for medical libraries achieve to provide access to information.

This research explores how medical college libraries are utilized, the user needs and barriers related to physical and digital resource. By understanding user perceptions value and these resources provide for medical education and research, the findings can help empower libraries to bridge the gap between traditional services and the digital information needs of modern medical education and research.

1.1. OPEN ELECTRONIC RESOURCES

Open electronic resources play an important role in medical libraries by providing access to a diverse array of academic materials such as like e-journals, e-books, dissertations, institutional repositories, and specialized databases. These resources are especially valuable in the medical field for staying update the latest research and clinical guidelines essential for teaching, learning and patient care. Open resources enable real time and remote access to allowing students, faculty and research scholars to continually their medical knowledge. These freely available resources also reduce the financial burden on institutions access by minimizing of subscription costs and promote equitable knowledge. Furthermore, open resources foster a culture that values evidence based learning and research by making information accessible to all users. However, effective utilization depends on well-developed infrastructure, digital literacy and user awareness. In many cases, learners are held back slow internet connectivity lack of training and just limited familiarity with advanced tools. medical libraries remain crucial, increasingly supporting learning and carrier growth through open resources. Proper strategies emphasizing access improvement and user training will enable libraries to maximize these resources and support evolving educational and research needs.

1.2. DIGITAL RESOURCES AND SERVICES

Digital resources have transformed medical libraries, from passive print material stores to dynamic, technology enabled knowledge centers. The medical libraries now provide access to e –books, e –journals, bibliographic databases, institutional repositories and subject specific portals ensure quick reliable and up to date on medical information. In addition to resources services that such as remote access, online reference support, digital orientations programs and user training are provided to learners and researchers so as to effectively. These resources support self-directed learning literature searching evidence based research, clinical decision making process for healthcare providers through guideline based information and scholarly content access. The digital environment enables libraries to extend services beyond physical limitations making information available anytime, anywhere. However, the barriers such as inadequate infrastructure, slow internet connectivity and insufficient user training often limit optimal resource. Sustained improvements in infrastructure and user education are necessary to fully realize the potential of digital technologies in meeting modern medical education and research needs.

2. LITERATURE REVIEW

Abdullahi et al., (2024) analyzed electronic resource utilization among Arabic students at the University of Ilorin and found no significant difference & based on gender or faculty, except educational level. They recommended comprehensive education programs for e-library users and increasing computer availability. The integration of educational technology (EdTech) with evolving library roles has been pivotal supporting online learning. Libraries are becoming supportive hubs for online learning helping improve student's engagement and academic outcomes. Francis and Femy (2024) evaluated the availability and use of electronic resources in educational institutes emphasizing the importance of easy access to a wide range of materials for academicians and researchers and the need for further investigation of e –resources administration to meet changing user demands. TELLA,et.al., (2024) investigated access, use and impacts of open educational resources on LIS academics in Nigeria. Highlighting challenges such as intellectual property right and repository updates. Habib (2022) reported slight awareness but partial utilization of medical e – resources among medical library users in Multan, Pakistan, with limited use of prominent databases like MEDLINE and PubMed. Schultz (2021) surveyed academic librarians, perception about accessibility practices related to OERs revealing a lack of in depth training but encouraging progress. Tarus.

V, et al., (2022) identified internet issues, information overload, and inadequate awareness, internet issues, information overload to challenges to PG student's utilization of OA resources in Kenya, re commending increased awareness and infrastructure improvements.

3. OBJECTIVES OF THE STUDY

This study aims to determine how users used open electronic resources by the Medical Institute library user in Tamil Nadu.

The specific objectives are:

- To identify source of knowledge about digital information resources among students.
- To assess the use of Medical Institute library services and online open resources.
- To evaluate user satisfaction with online open resources and services.
- To determine the purpose and level of usage of various digital resources and services by medical students
- To examine the frequency with which the students utilize different types of open electronic digital resources

4. RESEARCH METHODOLOGY

The study utilized a survey method to obtain a perusal of the awareness and involvement of the libraries in Tamil Nadu medical institutes with digital open resources and services. A designed questionnaire was designed and distributed to 350 undergraduate and post graduate library users in Chennai and Kanchipuram. A total of 280 responded to it, which provided a response rate of 80%.

The library patrons were randomly sampled. The information gathered included demographics, usage and access to e – resources, competencies, training barriers and benefits. Two open-ended questions on the questionnaire also posed a question concerning the challenges and the means of enhancing the open e-resources in the libraries. Analysis was done in Microsoft Excel.

5. DATA ANALYSIS

5.1. Respondents

Table 1: Descriptive Statistics of Respondents from Gender wise

Gender	Respondent	Percentage
Male	105	37.5%
Female	175	63.5%

From the table 1. The female respondents constitute a significant majority at 63.5%, while male respondents account for 37.5%. This data may reflect various factors, including the demographics of the surveyed population and the specific interests of individuals accessing medical library resources. Understanding the gender distribution can aid in tailoring library services and resources to better meet the needs of all users.

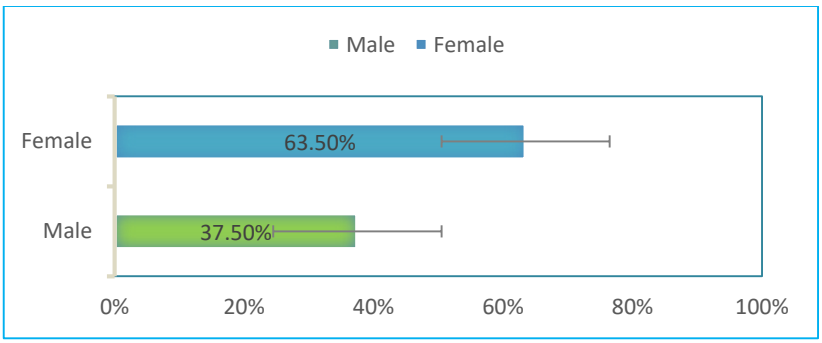

Fig 1 Gender wise respondents

5.2. Source of information about the e-resources

Table 2: Descriptive Statistics of Respondents Source of information about the Digital Open E-Resources

Sources of Information	Respondent	Percentage
Library Web Site / Portal	62	22.14
Library's orientation / Induction programs	49	17.50
Your colleagues/friends' Colleagues	23	8.21
Through Social Media	68	24.28
College website	44	15.71
Faculty of your Department	34	12.14

The table 2. exploring how users of a medical library access information reveals that digital platforms now play a leading role. Social media emerged as the most used source (24.28%), followed closely by the library's website or portal (22.14%), showing a clear preference for fast, digital communication. Traditional methods still hold value, with orientation programs (17.5%) and faculty guidance (12.14%) continuing to support user awareness. Other sources include the college website (15.71%) and peer recommendations (8.21%).
The findings highlight the importance of maintaining a strong digital presence through social media and regularly updated websites while also supporting traditional outreach efforts. Medical libraries can enhance user engagement by adapting to these evolving preferences and ensuring that reliable academic resources remain easily accessible.

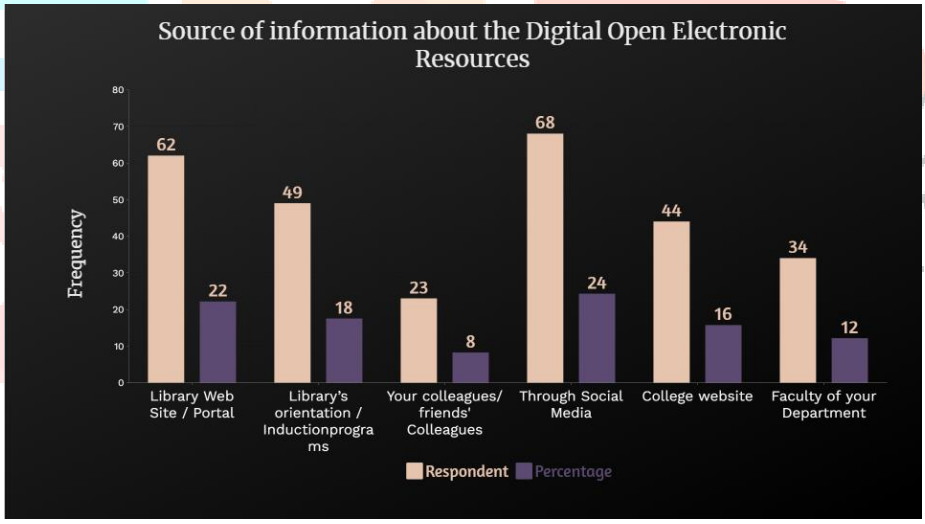

Figure 2: Descriptive Statistics of Respondents Source of information about the Digital Open Electronic Resources

5.3. Usage as per types of Digital Resources

Table 3: Descriptive Statistics of Respondents Accessed by types of Digital Open E- Resources

Type of E-Resources	Respondent	Percentage
E-Journals	71	25.35
E-Books	77	27.50
Bibliographic databases	33	11.78
CD-ROM Database	6	2.14
E- Thesis/Dissertation	44	15.71
Indexing / Abstracting Database	49	17.50

The table 3, highlights the Accessed by types of digital open e- resources in a medical library. The results show that e-books (27.50%) and e-journals (25.35%) are the most widely used, reflecting users' need for quick access to comprehensive and up-to-date medical knowledge. Indexing and abstracting databases (17.50%) and e-theses/dissertations (15.71%) also play an important role, especially for academic research and postgraduate studies. Bibliographic databases (11.78%) are moderately used, while CD-ROM databases (2.14%) are the least preferred, indicating a clear shift from older offline formats to web-based platforms.

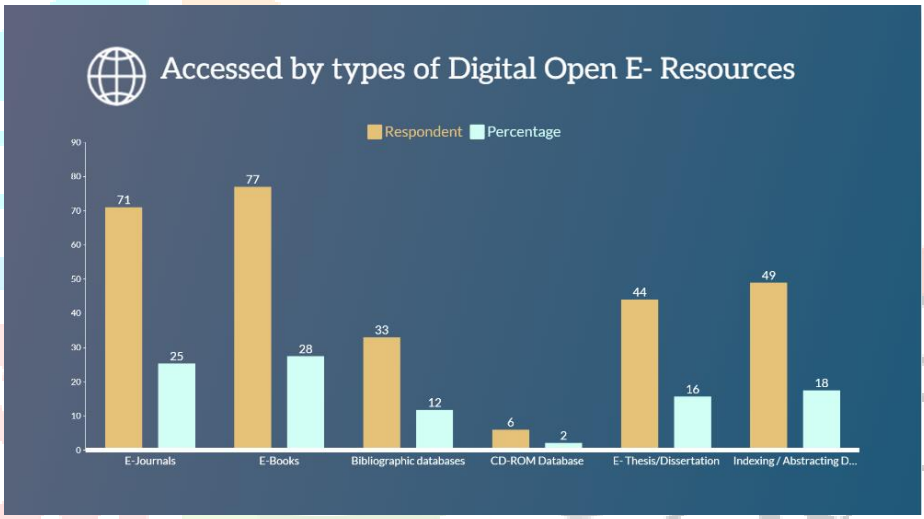

Figure 3: Descriptive Statistics of Respondents Accessed by types of Digital Open E –Resources

5.4. User Awareness and Usage of open E-resources and Services

Table 4: Descriptive Statistics of Respondents' Awareness of Digital Resources and Services of Medical Colleges

Digital Information Resource	Respondent	Percentage
E-Journals	36	12.85
E-Books	67	23.92
E-Newsletter	20	7.14
Bibliographic	21	7.5
databases	15	5.35
CD-ROM Database	6	2.14
E- Thesis /Dissertation	19	6.78
E-Standards	28	10
E- Patents	14	5
Institutional Repository	23	8.21

Institute Publication	18	6.42
Subject Specific Portals	13	4.64

The table 4 highlights the growing importance of digital resources in medical libraries, with e-books (23.92%) and e-journals (12.85%) being the most preferred by users. These resources are valued for providing quick access to comprehensive texts and the latest medical research. E-standards (10%) and institutional repositories (8.21%) also play a significant role, offering guidelines and access to institutional research outputs. Moderate use was noted for e-newsletters, bibliographic databases, and institute publications, which continue to support academic and clinical needs. Less usage was reported for patents, subject-specific portals, and CD-ROM databases, reflecting either their limited relevance or the shift towards more accessible online platforms. Overall, the findings show that medical library users prioritize resources that deliver updated, reliable, and easily accessible digital information.

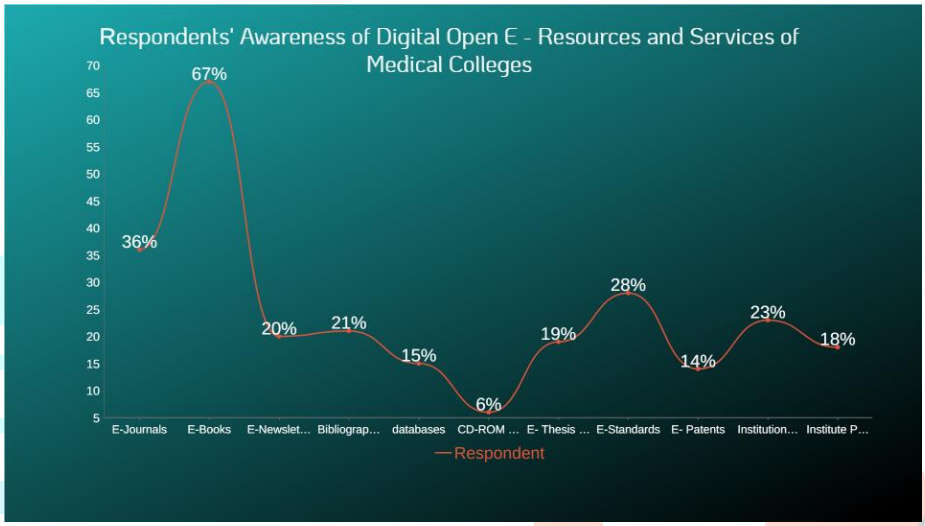

Figure 4: Descriptive Statistics of Respondents' Awareness of Digital Open E - Resources and Services of Medical Colleges

5.5. Purposes of Using Digital Resources and Services

Table 5: Descriptive statistics of Respondents for Purposes of Using Open Electronic Resources and Services

Purpose	Respondent	Percentage
Learning	74	26.42
For searching the literature for research	23	8.21
For updated Subject Knowledge	60	21.42
To write research papers	38	13.57
For Career Development	44	15.71
For preparing assignments	41	14.64

The table 5 shows that open electronic resources in a medical library are mainly used for learning (26.42%) and for updating subject knowledge (21.42%), highlighting their importance in academic growth and staying current with medical advancements. Many users also rely on e-resources for career development (15.71%) and preparing assignments (14.64%), which shows their role in supporting both education and professional growth. About 13.57% of respondents use them for writing research papers, while 8.21% use them for literature searching for research. This indicates that while research is important, most users prefer e-resources for direct learning and knowledge enhancement. Overall, the findings confirm that electronic resources serve

a multi-purpose role in medical libraries, going beyond research to support education, assignments, and professional development.

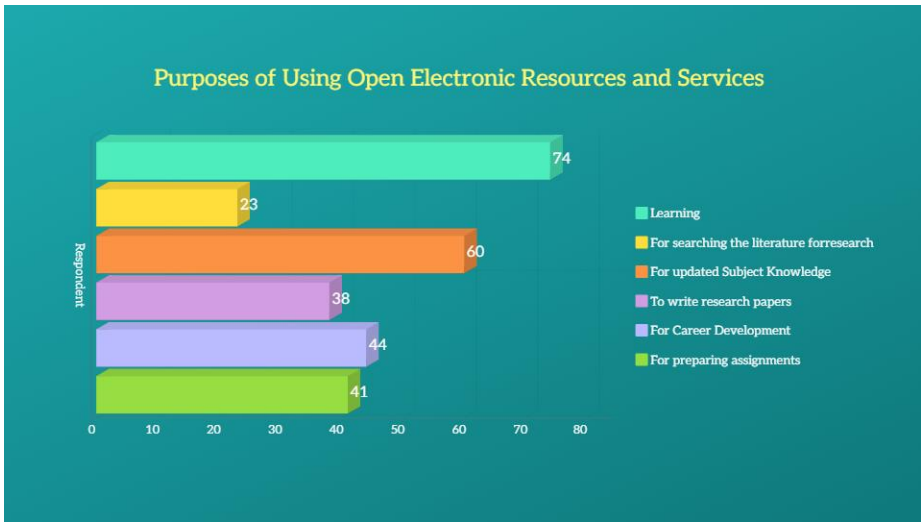

Figure 5: Descriptive statistics of Respondents for Purposes of Using Digital Resources and Services

5.6. Frequency of visits to the Library

Table 6: Descriptive statistics of Respondents of Frequency of visit to the Library

Frequency	Frequency of visits to the Library	Percentage (%)
Daily	155	55.35
Twice a week	73	26.07
Weekly	28	10
Monthly	12	4.28
Occasionally	7	2.50
Never	5	1.78

The table 6 shows that the medical library is actively used by its members, with a majority visiting daily (55.35%). A significant portion of users also visit twice a week (26.07%) and weekly (10%), reflecting the library's consistent role in supporting academic and research needs. Only a small percentage reported visiting monthly (4.28%) or occasionally (2.50%), while 1.78% never used the library. These lower numbers may be linked to the availability of online access to resources outside the library. Overall, the results highlight that the medical library continues to be a vital center for learning, research, and knowledge enhancement, with most users relying on it regularly.

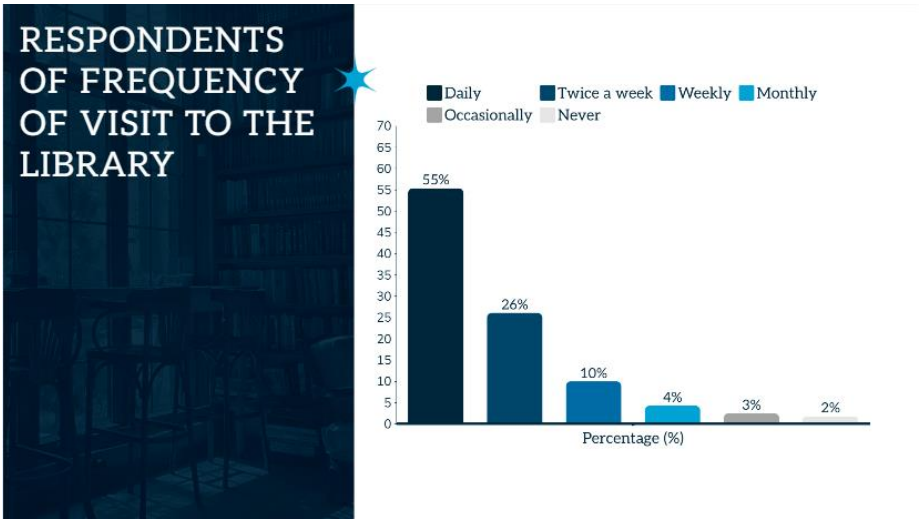

Figure 6: Descriptive statistics of Respondents of Frequency of visit to the Library

5.7. Purpose of visiting the Library

Table 7: Descriptive statistics of Respondents of Purpose of Library Visits

Purpose	Overall Purpose	Percentage (%)
To get the printout of the required material	8	2.85
To know the availability of material	56	20
To get material for class assignments	65	23.21
To Issue and return of books	122	43.57
To get literature for research	24	8.57
To Newspaper Reading	5	1.78

The table 7 show that the medical library is mainly used for the issue and return of books (43.57%), confirming the continued importance of printed resources. A large number of users also visit the library to collect material for class assignments (23.21%) and to check the availability of resources (20%), highlighting its role in supporting academic needs. Some respondents use the library for research literature (8.57%), while fewer rely on it for printouts (2.85%) or newspaper reading (1.78%). These lower figures may reflect the growing use of digital alternatives for such purposes. Overall, the results suggest that the library remains a central hub for academic and research support, particularly through access to books and assignment materials.

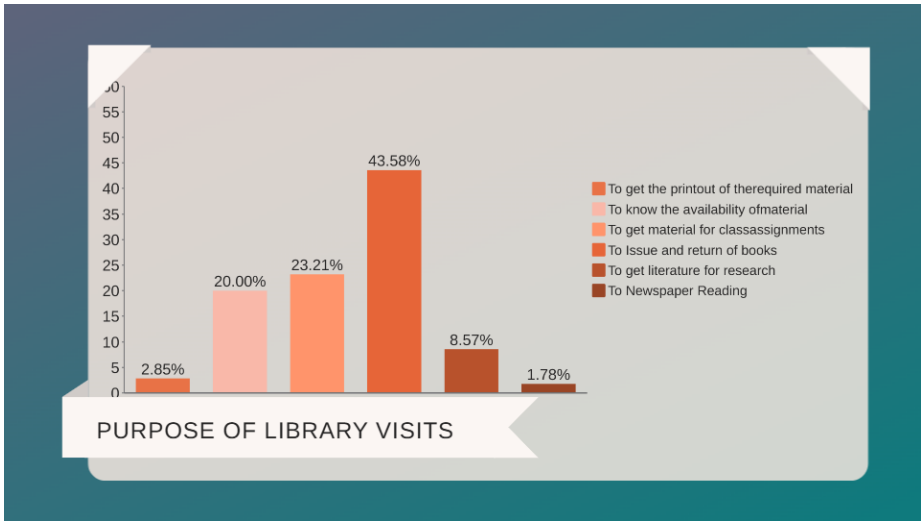

Figure 7: Descriptive statistics of Respondents of Purpose of Library Visits

5.8. Satisfaction with Digital Information Open Resources and Services

Table 8: Survey respondents' satisfaction with digital information resources and services, in terms of descriptive statistics

Satisfaction Level	Overall Satisfaction	Percentage (%)
Very Satisfied	195	69.64
Satisfied	71	25.35
Neutral	7	2.50
Dissatisfied	3	1.07
No Opinion	4	1.428

The table 8 indicate that the majority of users are very satisfied (69.64%) with the medical library's services, showing that the library is effectively meeting academic and research needs. Another 25.35% of respondents reported being satisfied, further confirming its positive impact. Only a small number expressed neutral opinions (2.50%), while 1.07% were dissatisfied and 1.42% had no opinion. These lower percentages suggest that dissatisfaction with the library is minimal. Overall, the findings highlight a high level of satisfaction among users and emphasize the medical library's importance as a reliable support system for learning, research, and professional growth

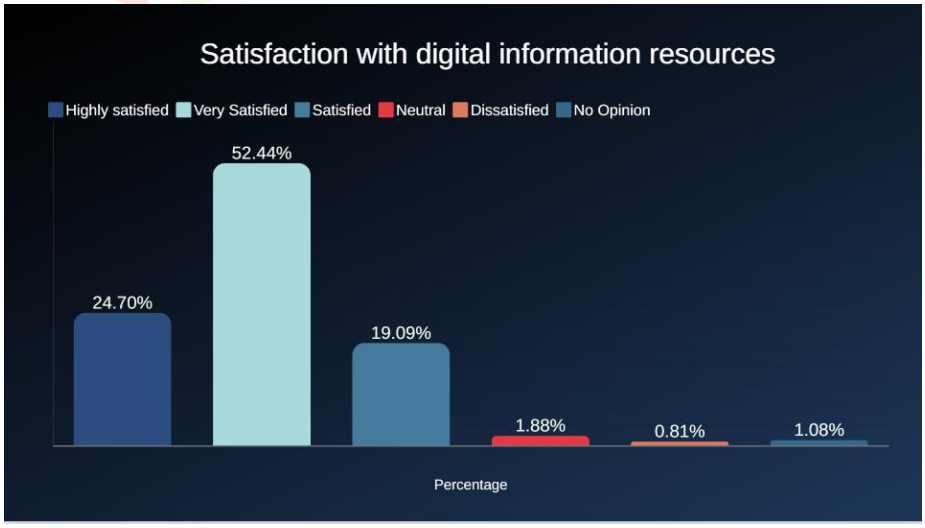

Figure 8: Descriptive statistics of Respondents of Satisfaction with Digital Information Resources and Services

5.9. Barriers to accessing the Digital Resources

Barriers	Overall Barriers	Percentage (%)
Slow Internet Speed	90	32.14
Lack of Access to Internet facility	42	15
Lack of training/ orientation to access and use Digital Resources	55	19.64
Unavailability of latest computers in Lib/Comp. Lab.	47	14.28
Electricity failure	14	5
Non-availability of full-text access to most of the journals	32	11.42

The survey identified several barriers faced by users in accessing digital resources in the medical library. The most common issue reported was slow internet speed (32.14%), followed by lack of training to use e-resources (19.64%) and limited internet access (15%). Many users also pointed out the unavailability of the latest computers (14.28%) and restricted full-text access to journals (11.42%), which limit research efficiency. A smaller percentage mentioned electricity failure (5%) as a challenge. Overall, the findings show that technical limitations, inadequate infrastructure, and insufficient training remain key obstacles. Improving internet facilities, upgrading systems, and providing proper user orientation could help maximize the benefits of digital resources in medical libraries.

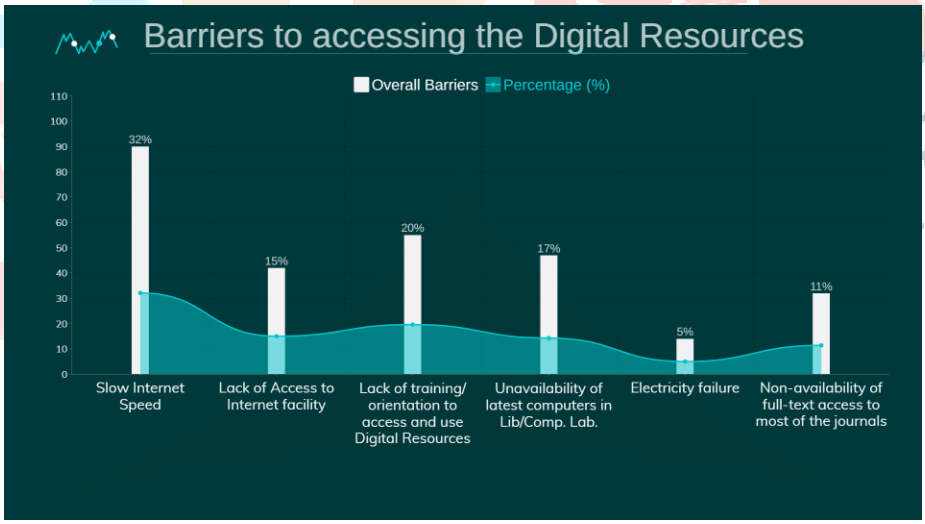

Figure 10: Descriptive Statistics of Respondents' Barriers to accessing the Digital Resources

6. CONCLUSION

The digital resources have entirely transformed the way we locate, as well as manage medical information. The use of the e-resources varies in our medical college library, and that is an indication that we are rapidly transitioning to digital learning and research. The Internet has turned the manner in which we learn and communicate and the majority of us now use the online tools in order to obtain the information we require. Analyzing the survey data, we can have a clear image of the way leaner use the library. The users are the students and the staff and e-books and e-journals take the first position in the list, which indicates that they favor online tools. Nevertheless, the use of a print material and the physical borrowing of books to do assignments remain very important. This help to realize the fact that print and digital do collaborate to fulfill various user requirements. The study indicates that the library performs a number of fundamental tasks. It is also used by students, not only to study and obtain new knowledge but also to be organized, enhance their

careers, prepare assignments and conduct their research. The occurs in turn repeatedly daily and weekly visit highlight the library ongoing significance as a central academic hub, even in an era of remote access to digital platform. The vast majority report that they have had a good experience in the library and they are very or satisfied with the services provided by the library. This implies that the medical library aids our education, research and career development. Nevertheless, the survey also highlighted such challenges as poor internet access, inability to learn how to use digital materials, inability to access full text journals and outdated equipment. Such roadblocks restrain the extent to which we can utilize digital tools and demonstrate that there is more measure required. Generally, the results demonstrate that the medical library remains important to students, researchers and faculty. Through integrating the old with ever-advancing digital facilities, the library has a capacity of expanding its position as a central location of learning, research and knowledge development. Ensuring that issues of the poor infrastructure, specific training and broader digital access is fixed will empower the library to continue aiding medical education and research deep into the digital age.

7. SUGGESTION

Based on the study's finding, the following recommendations are made to improve the usage of digital open resource among medical students in highlight of the through study's finding.

- We need to additional e-books, e-journals to enable us access over the counter medical journals of the highest quality in order to study and conduct research.
- The library requires a high speed Wi- Fi and more up to date computers to reduce waiting time and ensure that the library is a better place to study.
- Regular workshops and orientation classes on the use of digital resources would increase our confidence and improve our research skills.
- Continue to accumulate collection of print books on assignments and home taking, but maintain a good ratio of print to digital.
- Sensitize more individuals on patents, standards and subject portals by conducting seminars, manuals and so on so that we can be in a position to use them in more advanced researches.
- Implement plagiarism detectors, citation software and research advisory to assist us with writing papers.
- The solution is to fix power outages and internet outage as soon as possible to make the library reliable and win our trust. Regular feedback and adjust our resources and services, to maintain our satisfaction.

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