

LIBRARY AS KNOWLEDGE HUBS FOR OPTOMETRY EDUCATION AT RIPANS: AN EVALUATION THROUGH SDG-4 (QUALITY EDUCATION)

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ABSTRACT

As learning and innovation accelerators, libraries are essential hubs for professional and academic development in higher education. They serve as the cornerstone of clinical reasoning and evidence-based learning in optometry education. Using UN Sustainable Development Goal 4 (SDG-4)—"Quality Education"—as a framework, this study assesses the RIPANS library's contribution to the quality of education for undergraduate optometry students. A qualitative descriptive study design was employed, using data from a closed-ended questionnaire distributed to all undergraduate optometry students across all RIPANS batches. The instrument covered demographics, visit frequency, satisfaction levels, resource adequacy, and service perceptions. The majority of respondents (72%) were frequent library users, mainly for academic reading and assignments. Students expressed intense satisfaction with physical resources and staff support, but noted gaps in digital access, Wi-Fi connectivity, and extended opening hours. Thematic synthesis revealed three dominant areas: (a) Library as a central academic support system, (b) the digital divide affecting accessibility, and (c) service inclusiveness as a key to equitable education. The RIPANS library substantially supports quality education in optometry and aligns with SDG-4 goals. However, to function as a complete "knowledge hub," investments in digital infrastructure, librarian-faculty collaboration, and structured information-literacy programs are recommended.

Keywords: Library, Knowledge Hub, Optometry Education, SDG-4, Quality Education, RIPANS, Mixed-Methods Evaluation

1. INTRODUCTION

Libraries in higher education are not mere repositories of books; they are integral to the creation and dissemination of knowledge. They represent the academic heart of institutions, serving as collaborative learning environments and promoting intellectual engagement. In professional education, particularly in healthcare and optometry, libraries support evidence-based practice, critical reasoning, and research aptitude — all essential components of quality education. The United Nations' Sustainable Development Goal 4 (SDG-4) emphasises inclusive and equitable quality education and lifelong learning. Libraries thus act as catalysts for intellectual growth, enabling access to global knowledge, fostering digital literacy, and bridging the gap between classroom and real-world competencies. The primary goal of academic libraries and librarians at all educational institutions is to meet users' information needs. Newly admitted students arrive at colleges and universities each year with a variety of needs and aspirations. The academic library is considered the "heart" of any educational establishment. Academic institutions' libraries serve a wide range of users, including administrators, teaching and non-teaching personnel, research scholars, and students with diverse information needs. (Muthuraja, Surendra & Halyal, 2018)

The Regional Institute of Paramedical and Nursing Sciences (RIPANS) in Aizawl offers professional programs in optometry, nursing, and allied health sciences. The optometry curriculum integrates clinical and theoretical learning; therefore, access to updated educational and research materials is crucial. Despite libraries' centrality, few studies have examined their effectiveness in Northeast India, especially in optometry education. The main goal of university libraries and their librarians has been to meet their patrons' demands. New students arrive at the university each year with a variety of requirements and expectations. Additionally, the library has become more complex and challenging for both librarians and patrons due to new databases, technology, and creative information access methods. The number of materials accessible, the unwelcoming attitude of library employees toward patrons, and the challenge of locating these resources all contribute to issues for patrons.

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This study aims to qualitatively assess the library's role at RIPANS as a “*Knowledge Hub*” for optometry students using data from a structured, closed-ended questionnaire. The focus is on student demographics, usage frequency, satisfaction levels, and perceptions of services, interpreted in alignment with SDG-4 quality education principles. Information literacy abilities have been a crucial component of a graduate's qualities in recent years. There has been a noticeable slow change in emphasis from content to critical thinking and lifelong learning. Student-centred learning is replacing teacher-centred instruction. As a result of this change, communities are realising the value of information literacy. The current state of university libraries has altered as a result of the ICT revolution and its use in libraries. To improve skills and knowledge through training, which eventually leads to the professional growth of library staff, awareness and attitude changes about libraries must be fostered. Continuing education programs are a crucial component of library staff professional development. Professionals at libraries engage in lifelong learning. The transfer of tacit knowledge mostly fuels long-term library expansion and organisational innovation. In contrast to explicit information, which may be recorded and shared through guides or instructional materials, tacit knowledge is internal to people and passed down through conversations, observations, and practical experience. These insights support a culture of learning and ongoing development inside the library organisation as they are taken in, put to use, and internalised by others. In addition to enhancing staff's collective expertise, this approach delivers creative services, initiatives, and solutions that better meet the evolving needs of library patrons.

2. LITERATURE REVIEW

Boruah & Ali (2025) found that the continuing education and professional development of university library staff is the main topic of this essay. Library staff should receive ongoing training and professional development to stay abreast of changing trends, technologies, and information management best practices. This continuous learning improves their abilities, service delivery, and career advancement within the library profession. Azmir & Salim (2024) found, through bibliometric and network analyses, that the study aims to unravel the joint scientific trajectory of open innovation and knowledge transfer in libraries. This study explores the significance of knowledge transfer strategies within libraries: knowledge transfer within LIS research and journals, knowledge retention for departing employees, and knowledge transfer in information literacy programs. The study also includes insights and expertise that are deeply ingrained in organizational strategy. Patidar, Kamble & Ghalappa (2024) conducted a study to evaluate user satisfaction with library services in a few university libraries in Karnataka using a well-structured questionnaire. According to the study's findings, most respondents visited the libraries of the universities of concern to check out books and other materials related to their fields of study. They were also satisfied with the arrangement of the textbooks and the library's services. Mandloi & Ambia (2022) stated that it is essential to assess the library's effectiveness. Beyond the everyday operational capabilities, the evolving situation necessitates the acquisition of new abilities. This study would also be very helpful in generating creative, unique ideas to raise the standard of library and information science instruction in India. Gogoi, Singson, & Thiagarajan (2021) report that the current study's findings provide strong evidence that library anxiety affects many students, regardless of gender, language of instruction, type of university, discipline, caste, or community. The disparity in library anxiety levels between independent variables points to a severe deficiency in information literacy. Students' overall library anxiety scores were moderate; their concerns included staff approachability, feelings of inadequacy, and library constraints. Nonetheless, the study's results also imply that children feel comfortable utilizing the library. They are eager to use the library's resources and are upbeat and enthusiastic. Naik & Kumar (2021) discussed how the researcher examined patrons' perceptions of Bangalore City's first-grade colleges regarding library materials and services. The study aimed to assess how well-informed people are about library resources and services and found that the majority of students expressed satisfaction with the reading room's size, followed by the library's furniture, restrooms, ventilation, and cleanliness. The investigator recommended that library collections and other operations be automated to swiftly and efficiently meet consumer needs. Yadav, Uraon, & Sinha (2019) depict that in any industry, information literacy is essential for people to achieve their goals. Their study aimed to increase

information literacy among library patrons. According to the study's findings, some students were aware of the various information sources and search strategies. The study also shows that information literacy needs to be promoted in several areas, including cataloguing, classification, and library OPACs. Muthuraja, Surendra & Halyal (2018) investigated students' satisfaction with the library's resources, services, and facilities of C. S. Bembalagi Arts, SHA. M. R. Palaresha Science and G. L. Rathi Commerce College Library, Ramdurg. They found that the majority of respondents regularly visited the library and were delighted with the general book collection, while others were satisfied with the textbook collection. They also suggested that college libraries should conduct user studies regularly and that user assistance is required to help patrons meet their information needs and ensure that the library's resources and services are accessible. Adamu (2017) concluded that the general perception of undergraduate students towards the use of the YMSU library's facilities, resources, and services on the city campus is highly satisfactory. However, it is recommended that YMSU library management continue to maintain a high level of user satisfaction by improving the provision of current and relevant information resources, modern facilities, and appropriate services that meet users' needs and expectations. In addition, to sustain users' high level of satisfaction, it is necessary to address all the problems identified by undergraduate students. Singh & Kuri (2017) discussed user satisfaction with library resources and services in IIT libraries in India. A survey research method was adopted to address the research questions using a well-structured questionnaire. They suggested that libraries are shifting from print to electronic formats. Hence, the library and information science professionals should always be a step ahead of their users. Mishra (2016) reported that most students and researchers visited the library frequently. However, one still needs to be aware of the library's resources and services. Additionally, among all respondents from MZU, NEHU, SU, and RGU, they indicated their satisfaction with library services when a university-by-university calculation was used to determine the satisfaction rates across universities. As a result, the university libraries of MZU, NEHU, and both SU and RGU rank first, second, and third in order of preference, respectively.

3. OBJECTIVES OF THE STUDY

- a) To describe demographic patterns of library users among optometry students.
- b) To evaluate the frequency and purpose of library usage.
- c) To assess student satisfaction with library services and resources.
- d) To interpret the findings qualitatively in relation to SDG-4 indicators of quality education.

4. METHODOLOGY

The present study adopted a descriptive cross-sectional research design with a quantitative approach to evaluate the library's role as a knowledge hub in promoting quality education among undergraduate (UG) optometry students at RIPANS, Aizawl, Mizoram. The study was designed to assess students' perceptions, satisfaction levels, usage patterns, and awareness of library services in relation to the objectives of Sustainable Development Goal (SDG)-4: Quality Education. The study was conducted at the Department of Optometry, Regional Institute of Paramedical and Nursing Sciences (RIPANS), Aizawl, Mizoram. The institute's central library and departmental resources serve as key learning centres for students, offering printed and electronic materials, reference services, and digital access. The study population consisted of undergraduate students enrolled in the Bachelor of Optometry (B.Optom) program at RIPANS. Participants from all academic years (1st to 4th) were invited. A total of 127 undergraduate optometry students were selected using convenience sampling. The inclusion of students from all four years ensured representation across different academic levels. Participation was voluntary, and informed consent was obtained from all respondents before data collection. A structured, closed-ended questionnaire was developed to align with the study's objectives and previous literature on library usage and educational quality indicators. The study relied on self-reported data, which may be subject to response bias. Conducted only among optometry students; results may not generalize to other departments. The sample size was limited due to time constraints and because the study was based on a single Institute and a single Allied health domain (Optometry). The following criteria were employed in the study:

4.1 Inclusion Criteria

- i) Students currently enrolled in the B.Optom. Course at RIPANS.
- ii) Students willing to participate and provide informed consent.
- iii) Students regularly using library facilities or having a library membership.

4.2 Exclusion Criteria

- i) Postgraduate or paramedical students from other departments.
- ii) Students absent during the survey period or who declined consent.

5. FINDINGS & DISCUSSIONS

5.1 Demographic Profile of Respondents

The study included undergraduate optometry students from various academic years, with a maximum from the third year (38.3%) & minimum from the fourth year (6.3%). The mean age (21.2) reflected a young student population (Table 5.1). A gender imbalance was observed, with females comprising 80.3% and males 19.7% of respondents (Fig. 5.1). In terms of regional representation, 44.9% of students were from Mizoram, while 11.8% hailed from Tripura, indicating significant participation from northeastern states.

Table 5.1: Age-Group & Course Year-wise Distribution

Sr. No.	Age Group	No.	%	Year	No.	%
1	Below 20	8	6.3	1st	41	32.28
2	20-22	84	66.14	2nd	29	22.84
3	23-25	13	10.24	3rd	49	38.58
4	Above 25	22	17.32	4th	8	6.3
Total		127	100		127	100

This means that the north-eastern state is now coming forward with education, which is a good sign for the country, moreover, as the Government of India aligned with a movement, "Shashakt Nari, Shashakt Samaj," which reflects the form of the North East Region of the country.

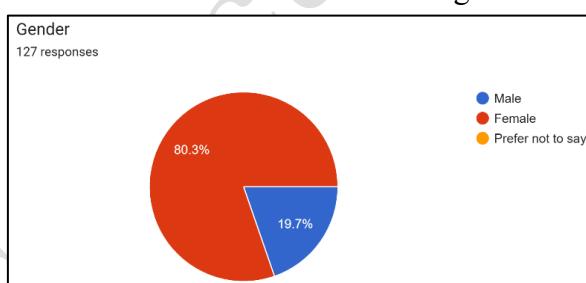


Fig. 5.1: Gender-Wise Distribution

5.2 Library Access and Awareness

Access to library facilities was facilitated through multiple sources. Approximately 40.25% of students reported receiving library resources through faculty members, while 32.3% accessed them via library staff. However, only 21.8% of students regularly borrowed academic books and journals, whereas 65.3% did so occasionally. Additionally, 82.7% acknowledged that the library's resources significantly support academic learning and research in optometry, suggesting an awareness of its pedagogical value.

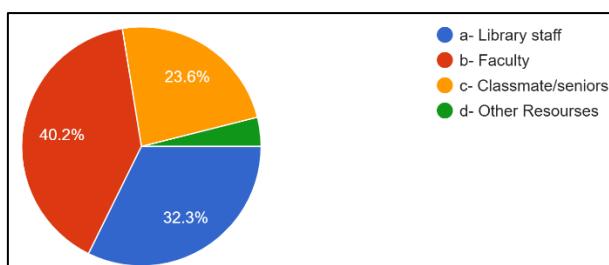


Fig. 5.2: Library Access and Awareness

5.3 Library Uses Pattern

Regarding frequency of library visits, 52% of the students visited the library weekly, and 33.6% visited twice a month, indicating an encouraging pattern of regular engagement. A majority (81.3%) used the library primarily for quiet study, underlining its importance as a conducive learning environment.

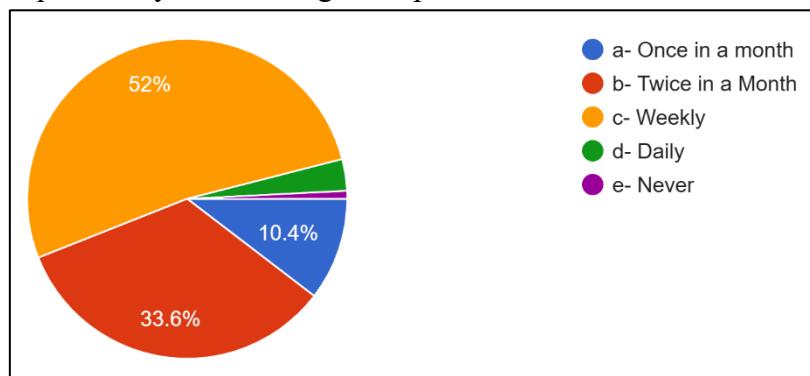
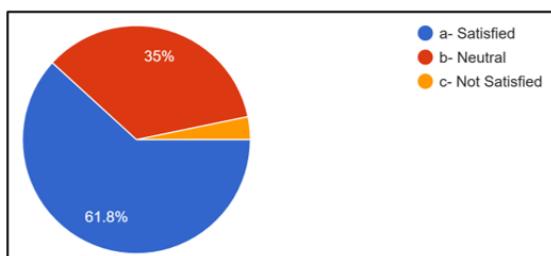


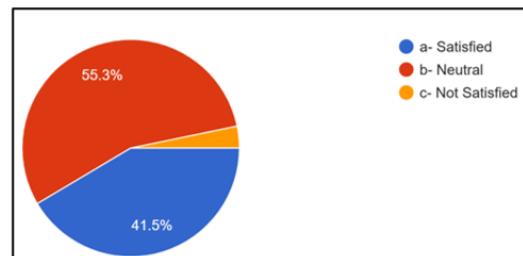
Fig. 5.3: Library Uses Pattern

5.4 Resource Availability and Quality

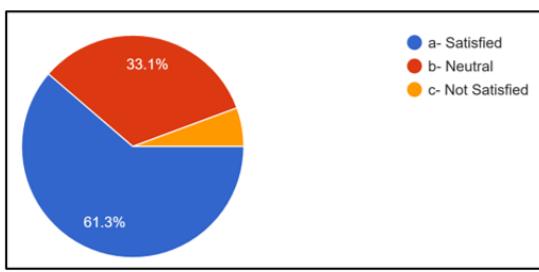
Perceptions of the library's services and physical environment were moderately positive. 61.8% of students were satisfied with the availability of adequate textbooks and reference books, while 41.5% were satisfied with the availability of the latest editions. Regarding physical infrastructure, 61.3% expressed satisfaction with facilities such as lighting, seating arrangements, and internet services. However, satisfaction levels were notably lower regarding inclusivity measures: only 28.7% of respondents were satisfied with the assistive technologies and resources available to students with poor vision and other disabilities. This highlights a gap in accessible educational infrastructure that requires attention.



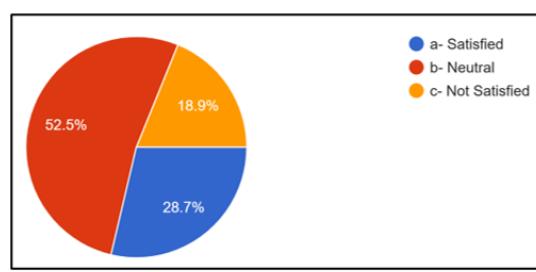
Availability of Adequate Textbooks and Reference Books



Availability of the Latest Editions



Satisfaction with Facilities



Satisfied with the Assistive Technologies

Fig. 5.4: Resource Availability and Quality

5.5 Library's Role in Digital and Sustainable Learning (SDG 4)

A large proportion of respondents (85.4%) agreed that the use of library resources promotes sustainable and eco-friendly learning practices. The same percentage affirmed that the library supports equal access to quality education regardless of socioeconomic background. Moreover, 68.3% recognized that library initiatives align with Sustainable Development Goal 4 (SDG-4): Quality Education, reflecting institutional awareness of the global education agenda.

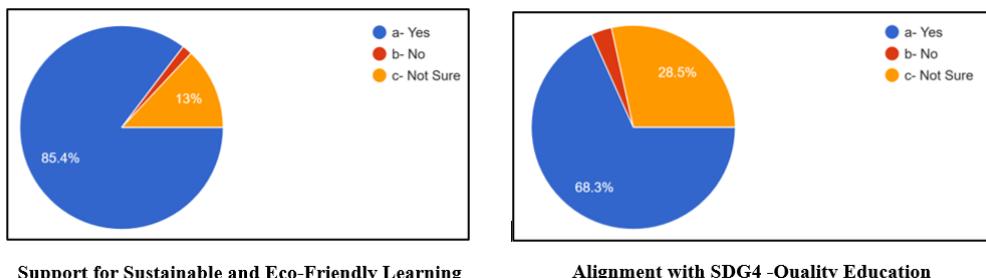


Fig. 5.5: Library's Role in Digital and Sustainable Learning (SDG 4)

5.6 Perceived Academic Impact

The library's role extended beyond providing resources—it also contributed to the development of higher-order academic skills. The majority (60.5%) of students agreed that the library experience helped enhance critical thinking and problem-solving abilities. An equal proportion (60.5%) believed it supported research aptitude and the development of evidence-based practice in optometry education. These responses emphasize the qualitative influence of library exposure on academic maturity and independent learning.

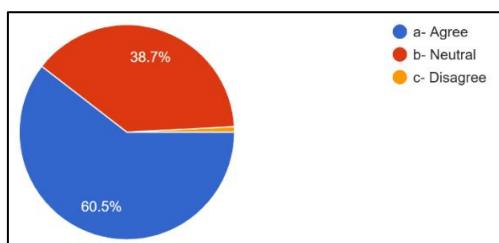


Fig. 5.6: Perceived Academic Impact

5.7 Institutional and Community Linkages

Regarding the institutional and community linkage, the findings revealed strong student endorsement for inter-institutional and technological advancement in library services. The majority (88.6%) of respondents believed that collaboration between the library and other institutions would strengthen educational equality and shared learning.

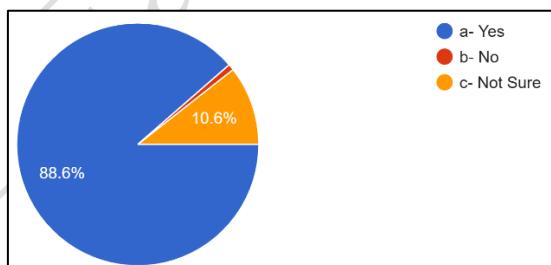


Fig. 5.7: Institutional and Community Linkages

5.8 Challenges

The majority (74.8%) of the respondents agreed (26.8% - Strongly Agreed, 48% - Agreed) that lack of awareness about library services limits student participation. While 50.4% (17.1% - Strongly Agreed, 33.3% - Agreed) respondents stated that there is inadequate promotion of digital or specialized optometry related library resources.

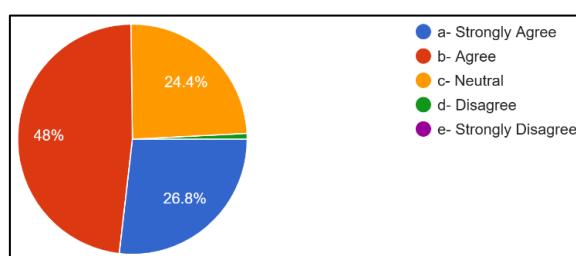


Fig. 5.8: Challenges

5.9 Scope for Improvement in Library Services

The majority (80.7%) of the respondents suggested that the library should develop a mobile or digital application to simplify access to resources, reflecting a growing demand for digitalization in academic support services. Furthermore, 39.8% of the respondents strongly agreed that regular awareness and orientation sessions should be conducted to enhance library engagement.

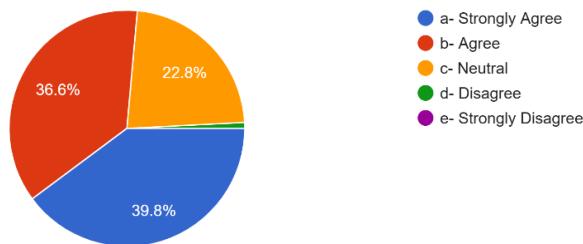


Fig. 5.9: Scope for Improvement in Library Services

Overall, the results demonstrate that the library serves as a central hub for academic growth, sustainability, and inclusivity in optometry education at RIPANS, Aizawl. While the majority of students expressed satisfaction with library facilities and acknowledged its role in advancing SDG-4, areas such as assistive technology and digital resource accessibility remain in need of enhancement to achieve a truly equitable and future-ready learning environment.

6. CONCLUSION

The library of RIPANS is a critical pillar of quality education in optometry branch, providing accessible study environments, reliable textbooks, and responsive staff support. The findings confirm that students view it as indispensable for academic success. However, the institution faces challenges in digital integration, online journal availability, and literacy training, which limit its full potential as a modern knowledge hub. To align with SDG-4 and global educational standards, the following recommendations are proposed:

- Digital Enhancement:** Introduce subscriptions to core optometry and vision-science databases; upgrade internet bandwidth and remote access.
- Information Literacy:** Conduct regular workshops on literature searching, citation management, and critical appraisal.
- Curricular Integration:** Embed librarian collaboration into research and project components.
- Inclusive Access:** Extend opening hours, provide assistive technologies for visually challenged users, and promote equitable access.
- Monitoring and Evaluation:** Establish quality indicators linked to SDG-4 targets to measure progress annually.

Strengthening these areas will transform the RIPANS's library from a traditional learning space into a vibrant, digitally enabled knowledge hub — a true driver of quality, inclusive, and sustainable education in optometry.

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