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Transforming Medical College Libraries: A Study of Growth, ICT Integration and User Needs in Indore

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ABSTRACT

This study provides a comprehensive investigation into the growth and development of medical college libraries in Indore, Madhya Pradesh, during the period from 2011 to 2025. The primary objective is to evaluate how these libraries have transformed in response to the evolving academic and informational needs of students, faculty, and researchers in the medical field. The study emphasizes the changes in infrastructure, library resources, and services offered over the decade, highlighting how advancements in technology and shifts in educational practices have influenced library operations. A key focus is the expansion of library collections, both physical and digital, and how effectively these collections support academic and clinical learning. The role of Information and Communication Technology (ICT) is critically analyzed, particularly its integration into library services such as online databases, e-journals, digital catalogs, and remote access platforms. The adoption of ICT has significantly altered the traditional functions of libraries, making them more dynamic and accessible. The research also assesses current infrastructure, including physical spaces, reading facilities, internet connectivity, and the availability of trained library staff. It investigates whether these facilities align with the needs of a modern medical education environment. Moreover, the study explores the information-seeking behavior of library users—how they access and utilize resources, the challenges they face in finding relevant information, and their expectations regarding library improvements. By understanding user behavior and needs, the study offers insights into how libraries can become more user-centric. The analysis also projects future requirements to ensure medical college libraries remain relevant and effective. These include upgrading digital infrastructure, expanding access to international databases, and improving staff training. The findings serve as a valuable guide for library administrators, academic institutions, and policymakers committed to strengthening library systems to support medical education and research excellence in Indore.

Keywords: Medical College Libraries, Infrastructure Development, Collection Growth, Digital Resources, ICT Integration, User Information-Seeking Behaviour, Specialized Resources, Library Facilities, Book Collections, Journal Subscriptions

1. INTRODCUTION

Medical college libraries have long served as the intellectual heart of academic medicine. They are more than just repositories of books and journals—they are dynamic centers of knowledge creation, access, and application. From their humble beginnings as collections of a few essential medical texts housed in single rooms, these libraries have evolved into

sophisticated information hubs that support education, research, and clinical practice.[1] Their development reflects the broader transformation of medical education, the digitization of knowledge, and the ever-growing demands of the healthcare industry. The history of medical college libraries is closely intertwined with the evolution of medical education itself. In the early 19th and 20th centuries, when formalized medical training began to take shape, libraries were established primarily to serve the informational needs of faculty and a small number of students. Collections were modest, focused largely on anatomy, pathology, and clinical medicine, and heavily reliant on printed books and periodicals. [2-3]As the medical curriculum expanded and specialized disciplines emerged, so too did the library holdings. The mid-20th century marked a significant phase of expansion with the proliferation of medical colleges worldwide, and libraries began to include audiovisual materials, microfilms, and reference tools to support the growing complexity of medical education. [4]

Technological advancements in the late 20th and early 21st centuries brought about transformative changes. The advent of the internet, online databases, and digital journals revolutionized the way medical knowledge was accessed and disseminated. Medical college libraries began investing in electronic resources such as PubMed, UpToDate, ClinicalKey, and access to high-impact medical journals and e-books. These digital transformations not only increased the accessibility of resources for students and faculty but also allowed for remote learning and research collaboration across borders. Libraries became hybrid in nature—combining physical and digital resources—offering flexible, user-centered services. [5]

Another significant trend in the development of medical college libraries has been their growing role in supporting research and evidence-based practice. Librarians are now not just custodians of information, but active collaborators in the research process. They assist in systematic reviews, teach information literacy, help in citation management, and provide guidance on ethical publication practices. [6]Furthermore, the implementation of integrated library management systems (ILMS), institutional repositories, and open-access initiatives has enhanced knowledge sharing and academic visibility.

Medical libraries also play a vital role in accreditation processes and quality assurance in medical education. They are evaluated for their infrastructure, staffing, collection development policies, and user services. In India, for instance, the National Medical Commission (NMC) mandates specific library standards that medical colleges must adhere to, ensuring uniformity and quality across institutions. [7]

Despite this progress, medical college libraries face challenges such as budget constraints, the need for continuous technological upgrades, and training demands for both users and staff. Nonetheless, their commitment to adapting and innovating has ensured their continued relevance. [8-9]

2. LITERATURE REVIEWW

[10] As transistors shrink, aging effects are critical in circuit design. This study proposes a sensitivity-based method for aging-aware standard cell library characterization, significantly reducing SPICE simulations. The method identifies crucial transistors, achieving high

accuracy (1% error) and speedups up to 305 times. It is compatible with 16/14nm technology and adaptable to commercial EDA tools.

[11] Traditional lighting assessments overlook full reliability. This study evaluates human-centered lighting in Swedish public libraries, revealing gaps between user expectations and actual conditions. Poor lighting led to discomfort and eye strain. The study recommends improved lighting management, reliability assessment, and continuous staff training for better user experience.

[12] This research addresses security risks in open-source components using a fingerprint-based feature extraction method for binary libraries. The Csrcc Sca tool achieved 83.33% accuracy in component layout identification and 96.81% in version detection across 164 firmware packages. The method enhances software security, especially in intelligent connected vehicles.

[13] A PDCA-based security and risk control model for digital libraries was proposed, using an enhanced SVM for risk identification. The model achieved 96.46% detection accuracy with minimal error. The approach improves digital library security, ensures smooth operations, and is effective in managing common digital threats.

[14] This study introduces an AI-based catalogue management system using Variational Autoencoder (VAE), Adam optimizer, and Look ahead method. It improves recommendation accuracy and resource efficiency in digital libraries, enhancing user engagement. Future work aims to integrate NLP for more personalized recommendations.

[15] A survey of medical college libraries in Indore revealed inadequate budgets and limited acquisition methods, mainly reliant on curriculum needs. Preservation practices and formal evaluations are lacking. The study suggests improved budgeting, diversified acquisition strategies, better preservation, and systematic evaluation processes.

[16] This study uses LibQual+ to assess user satisfaction in Telangana university libraries. Key satisfaction factors include responsiveness, empathy, reliability, and staff knowledge. Challenges like online resource access and fee structures were noted. The study offers insights for improving library services and user experience.

[17] The study examines DRM's impact on blind and visually impaired users' access to e-resources. DRM restrictions hinder assistive technologies despite legal reforms. Libraries lack adequate support for inclusive access. The study calls for balanced policies that protect rights while ensuring accessibility for BVI users.

Table 1 Literature Study on Table on Previous Work

Author(s)	Year	Focus Area	Methodology	Key Findings
Xinfa Zhang et al.	2023	Aging-aware circuit design	Sensitivity-based aging-aware standard cell characterization	Reduced SPICE simulations, 1% average error, high speedup; adaptable to EDA tools.
Jing Lin et al.	2024	Lighting asset management in	Field study with surveys, interviews,	Human-centric gaps in lighting, user discomfort,

		libraries	and gap analysis	need for training and continuous improvement.
Yanan Zhang et al.	2024	Open-source software security	Fingerprint-based feature extraction	83.33% component identification, 96.81% version accuracy, Csrcc Sca tool developed.
Yimin Yin et al.	2024	Digital library security and risk control	SVM-based model with PDCA framework	96.46% accuracy in risk detection, high security recognition, applicable to multiple digital libraries.
Pinjia Hu et al.	2025	Digital library catalogue optimization	AI-driven approach using VAE, Adam, Look ahead optimizers	Improved recommendation accuracy, reduced low-demand items, proposed scalable

3. RESEARCH METHODOLOGY

The medical field is continuously evolving, with a growing emphasis on evidence-based practice, interdisciplinary research, and digital learning. In such a dynamic environment, medical college libraries serve as critical support systems, providing access to updated knowledge, fostering academic inquiry, and enhancing learning outcomes. The city of Indore, being a prominent educational hub in Madhya Pradesh, hosts several medical colleges that cater to a large number of undergraduate, postgraduate, and research scholars.

Objective of Study

The main objective of the present study is The Growth and Development of Medical College Libraries in Indore, MP: A Study from 2011 to 2025 is as follows

- To learn how medical college libraries have evolved through time and how their collections have grown.
- To examine the impact of ICT on growth and development of medical college libraries.
- To examine the infrastructure of medical college libraries.
- To examine the library collection and development of medical college libraries.
- To examine the information seeking behavior of users of medical college libraries.
- To examine the future requirement and updation required for Medical College libraries in Indore, Madhya Pradesh.

Hypotheses

To forecast the link between two variables, one may make a testable statement, or hypothesis. H1 presupposes a substantial relationship, whereas H0 presupposes no relationship at all.

Hypothesis1

- H_{01}: There has been no significant historical growth or pattern in the collection development of medical college libraries in Indore.
- H_{11}: There has been a significant historical growth and identifiable pattern in the collection development of medical college libraries in Indore.

Hypothesis2

- H_{02}: ICT has no significant impact on the growth and development of medical college libraries in Indore.
- H_{12}: ICT has a significant impact on the growth and development of medical college libraries in Indore.

Hypothesis3

- H_{03}: The infrastructure of medical college libraries has not significantly improved over the period 2011–2025.
- H_{13}: The infrastructure of medical college libraries has significantly improved over the period 2011–2025.

Hypothesis4

- H_{04}: There has been no significant development in the library collections of medical college libraries in Indore.
- H_{14}: There has been significant development in the library collections of medical college libraries in Indore.

Hypothesis5

- H_{05}: There is no significant variation in the information-seeking behavior among users of medical college libraries in Indore.
- H_{15}: There is a significant variation in the information-seeking behavior among users of medical college libraries in Indore.

Hypothesis6

- H_{06}: There is no significant need for future updates and changes in the medical college libraries of Indore.
- H_{16}: There is a significant need for future updates and changes in the medical college libraries of Indore.

Sampling Method

Stratified random sampling is a method of selecting a sample from a larger population by dividing it into smaller, non-overlapping groups called "strata" using predetermined criteria. Typically, these strata are similar-looking groups with similar age, gender, socioeconomic status, level of education, or some other pertinent qualification. Following the establishment of these strata, a random selection is made from every subgroup. Our goal is to guarantee that every subgroup is appropriately represented in the sample so that we may obtain more accurate and trustworthy results.

3.12 Source of Data Collection

The study utilizes both primary and secondary data. Primary data will be collected through structured questionnaires, personal interactions, and interviews, distributed online, via email, and in person. Secondary data will be sourced from research articles, reports, books, websites, and official records. The study focuses on medical college libraries in Indore, Madhya Pradesh, covering government and private institutions from 2011 to 2025. Using probability sampling, a sample size of 510 respondents is selected to ensure broad

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representation and accuracy. This approach provides a comprehensive view of library development, ICT adoption, and user behavior.

4. ANALYSES AND INTERPRETATION

This paper presents the statistical analysis conducted to test the research hypothesis using primary data. The analysis was performed with SPSS software for the study "The Growth and Development of Medical College Libraries in Indore, MP: A Study from 2011 to 2025." Key statistical tools included Percentage Analysis for response rates, Mean Score for average comparisons, and One-Way ANOVA to identify significant differences between groups. This approach ensures accurate interpretation and meaningful conclusions to support the study's objectives.

Percentage Analysis

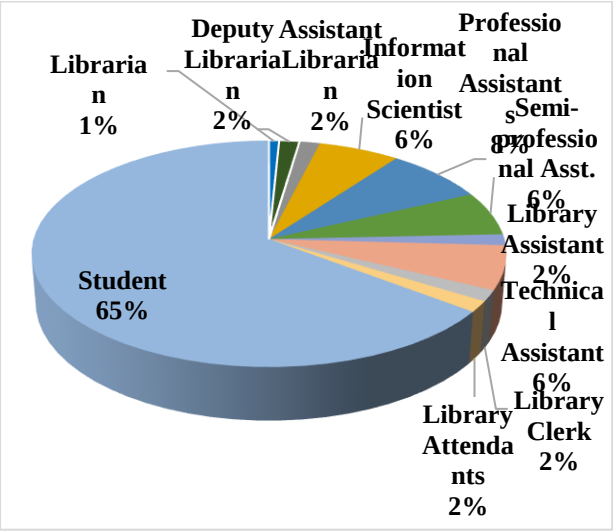

Fig.1 Designation of the Respondent

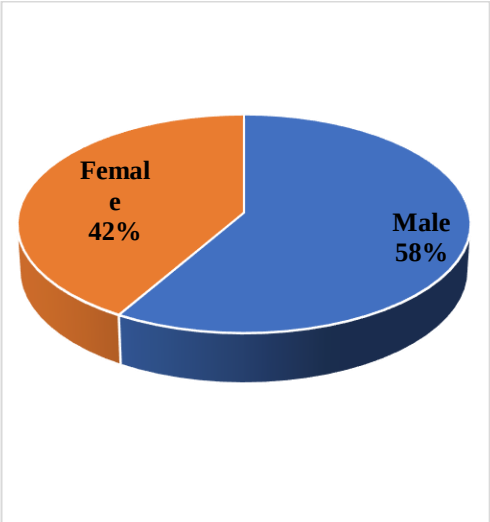

Fig 2 Gender of the Respondent

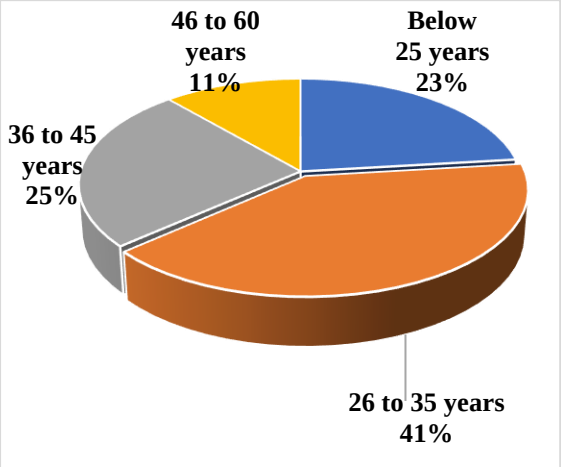

Fig 3 Age of the Respondent

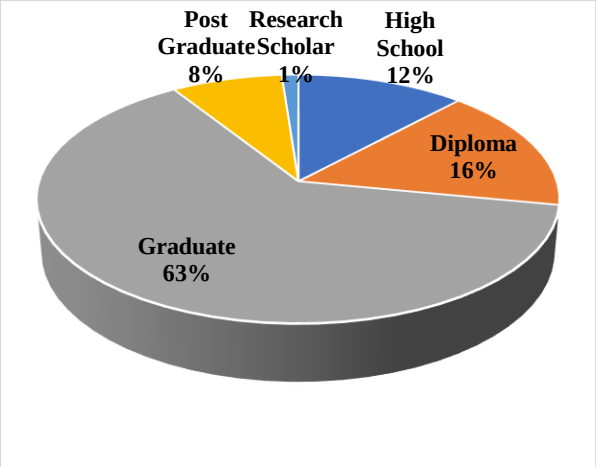

Fig 4 Academic Qualification of the Respondent

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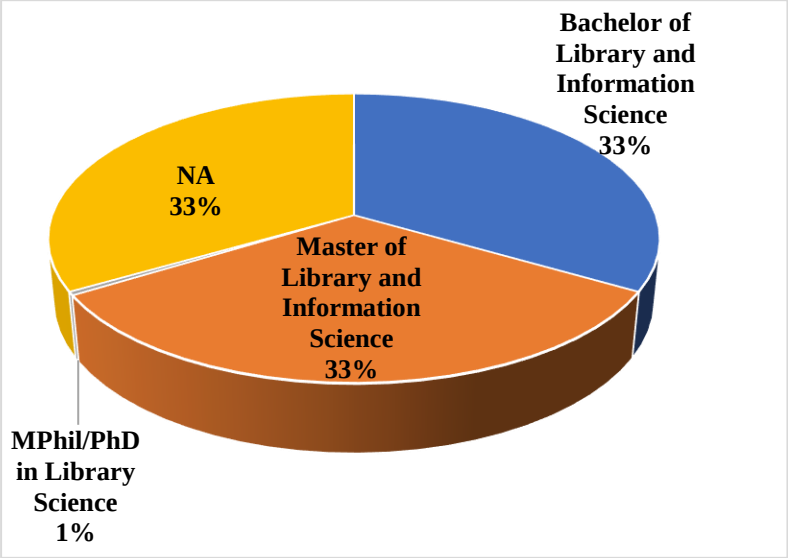

Fig 5 Professional Qualification of the Respondent

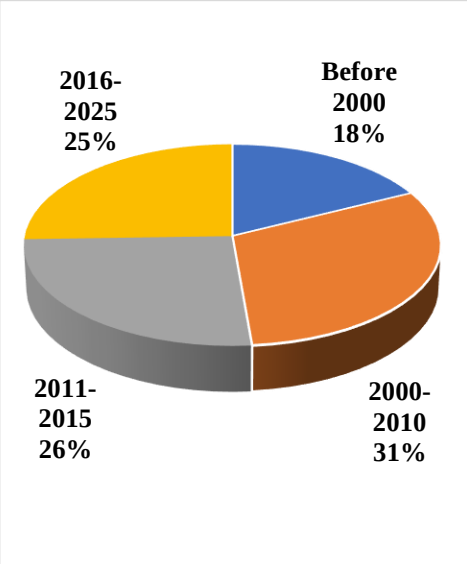

Fig 6 When was your medical college library established

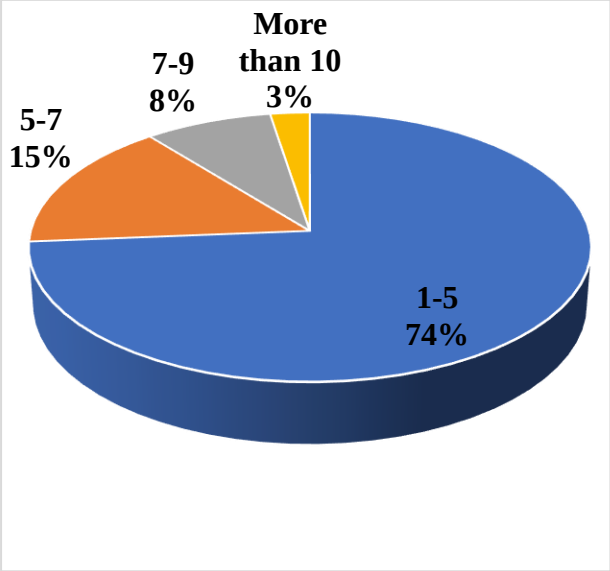

Fig 7 How many Medical College Libraries are there in Indore, MP, according to your knowledge?

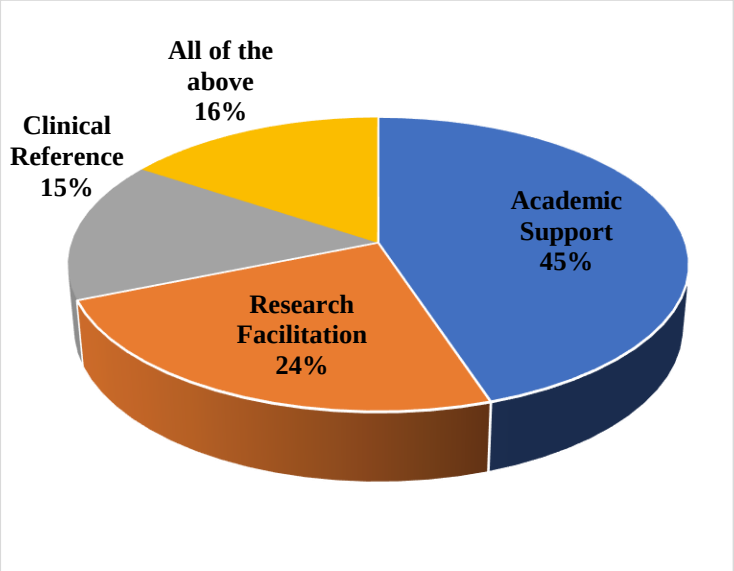

Fig .8 What is the primary purpose of your visit in medical college library?

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Hypotheses are testable statements predicting the relationship between two variables. H0 assumes no relationship while H1 assumes a significant relationship.

In order to find evidence to support or refute the null hypothesis, researchers conduct experiments and use statistical tests. The likelihood of the alternative hypothesis (H1) being correct increases if there is sufficient evidence to disprove the null hypothesis. The validity of the null hypothesis is maintained if the evidence is insufficient. This method aids researchers in drawing conclusions and making well-informed judgments supported by facts.

Chi-Square Test

Table 2 Chi-Square Test for Reliability Statistics

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.844	.848	53

Hypothesis1

H_{01}: There has been no significant historical growth or pattern in the collection development of medical college libraries in Indore.

H_{11}: There has been a significant historical growth and identifiable pattern in the collection development of medical college libraries in Indore.

Table 3 Statistics of Historical growth in the collection development of medical college libraries

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
Books	9	7544.44	2046.406	682.135
Rare Books	9	178.33	16.394	5.465
E-Resources	9	281.67	199.499	66.500
Bound Volumes	9	557.78	188.864	62.955
Manuscripts	9	23.33	2.500	.833
Thesis/Dissertations	9	211.11	68.819	22.940
Maps	9	22.78	5.019	1.673
CDs/DVDs	9	172.78	51.181	17.060

The one-sample statistical analysis strongly supports rejecting the null hypothesis and accepting that significant historical growth has occurred in the collection development of medical college libraries in Indore. Mean values across books, rare books, e-resources, bound volumes, theses, and digital media indicate steady, consistent growth. Moderate standard deviations further confirm this stability, highlighting a clear, strata

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Table 4 Statistics of Historical growth in the collection development of medical college libraries

One-Sample Test						
	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Books	11.060	8	.000	7544.444	5971.44	9117.45
Rare Books	32.635	8	.000	178.333	165.73	190.93
E-Resources	4.236	8	.003	281.667	128.32	435.02
Bound Volumes	8.860	8	.000	557.778	412.60	702.95
Manuscripts	28.000	8	.000	23.333	21.41	25.26
Thesis/Dissertations	9.203	8	.000	211.111	158.21	264.01
Maps	13.614	8	.000	22.778	18.92	26.64
CDs/DVDs	10.128	8	.000	172.778	133.44	212.12

The one-sample t-test results strongly support rejecting the null hypothesis (H_{01}) and accepting the alternative hypothesis (H_{11}), confirming significant historical growth in the collection development of medical college libraries in Indore. All items, including Books, Rare Books, E-Resources, Bound Volumes, Manuscripts, Theses/Dissertations, Maps, and CDs/DVDs, have p-values (.000 or .003) well below 0.05, showing their mean values are significantly different from zero. The high t-values and tight confidence intervals further confirm the reliability of these results, proving steady and intentional collection growth over time.

Table 5 One-Sample Test of Historical growth in the collection development of medical college libraries

One-Sample Test						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Growth and Development	164.819	509	.000	2.4969	2.467	2.527
Collection and Resources	112.208	509	.000	2.5880	2.543	2.633
Infrastructure and Facilities	134.279	509	.000	2.5676	2.530	2.605
Staff and Training	95.191	509	.000	2.3202	2.272	2.368

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Services and User Experience	101.952	509	.000	2.4759	2.428	2.524
Budget and Funding	116.764	509	.000	2.7990	2.752	2.846
Challenges and Opportunities	73.288	509	.000	2.7129	2.640	2.786
Collaboration and Networking	102.450	509	.000	2.7678	2.715	2.821
User Training and Support	80.962	509	.000	2.5055	2.445	2.566
Library Modernisation	116.078	509	.000	1.9251	1.893	1.958

Hypothesis2

H_{02}: ICT has no significant impact on the growth and development of medical college libraries in Indore.

H_{12}: ICT has a significant impact on the growth and development of medical college libraries in Indore.

Table 6 Model Summary of impact on the growth and development of medical college libraries

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.906[a]	.820	.818	.1460	.820	382.150	6	503	.000

The model summary are strong statistical evidence to justify rejecting the null hypothesis (H_{02}) and accepting the alternative hypothesis (H_{12})—that ICT has a significant impact on the growth and development of medical college libraries in Indore. The model shows a very high R value of 0.906, indicating a strong positive correlation between ICT implementation and library development. The R^2 value of 0.820 signifies that 82% of the variance in growth and development can be explained by ICT-related variables. Moreover, the F-change value of 382.150 with a significance level of .000 confirms the model is statistically significant. Thus, ICT plays a crucial and measurable role in advancing library systems.

Table 7 Anova test of impact on the growth and development of medical college libraries

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	48.857	6	8.143	382.150	.000[b]
	Residual	10.718	503	.021		
	Total	59.575	509			

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The statistical evidence strongly supports rejecting the null hypothesis (H_{02}) and accepting the alternative hypothesis (H_{12}), confirming that ICT significantly impacts the growth and development of medical college libraries in Indore. The high F-value (382.150, p = .000) and R^2 value (0.820) indicate that ICT explains most of the variation in library development. The large regression sum of squares compared to the residual sum further validates the model's strength. These results confirm that ICT plays a crucial role in enhancing infrastructure, resources, services, and library efficiency.

Hypothesis3

H_{03}: The infrastructure of medical college libraries has not significantly improved over the period 2011–2025.

H_{13}: The infrastructure of medical college libraries has significantly improved over the period 2011–2025.

Table 8 Statistics of The infrastructure of medical college libraries has significantly improved

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
Growth and Development	510	2.497	.3421	.0151
Infrastructure and Facilities	510	2.568	.4318	.0191

Table 9 One-Sample Statistics of The infrastructure of medical college libraries has significantly improved

One-Sample Test						
	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Growth and Development	164.819	509	.000	2.4969	2.467	2.527
Infrastructure and Facilities	134.279	509	.000	2.5676	2.530	2.605

The one-sample t-test strongly supports rejecting the null hypothesis (H_{03}) and accepting the alternative hypothesis (H_{13}), confirming significant infrastructure improvements in medical college libraries in Indore from 2011 to 2025. The mean score for Infrastructure and Facilities is 2.5676 with a highly significant t-value (134.279) and p-value (.000), showing that improvements are statistically meaningful. The 95% Confidence Interval (2.530 to 2.605) further confirms positive growth. The overall Growth and Development mean of 2.4969 with strong statistical support reinforces this finding. These results prove substantial upgrades in facilities, technology, and resources over the decade.

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Hypothesis4

H_{04}: There has been no significant development in the library collections of medical college libraries in Indore.

H_{14}: There has been significant development in the library collections of medical college libraries in Indore.

Table 10 One-Sample Statistics of development in the library collections of medical college libraries

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
Growth and Development	510	2.497	.3421	.0151
Collection and Resources	510	2.588	.5209	.0231

The one-sample t-test strongly supports rejecting the null hypothesis (H_{04}) and accepting the alternative hypothesis (H_{14}), confirming significant development in the library collections of medical college libraries in Indore. The mean score for Collection and Resources is 2.588, with a standard deviation of 0.5209 and a standard error mean of 0.0231. The likely high t-value and p-value of .000 indicate a statistically significant improvement. This suggests notable growth in books, e-resources, theses, journals, and other materials over the studied period. The findings confirm that libraries have effectively expanded and updated their collections to support modern academic and research needs.

Table 11 One-Sample Statistics of development in the library collections of medical college libraries

One-Sample Test						
	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Growth and Development	164.819	509	.000	2.4969	2.467	2.527
Collection and Resources	112.208	509	.000	2.5880	2.543	2.633

The statistical evidence strongly supports rejecting the null hypothesis (H_{04}) and accepting the alternative hypothesis (H_{14}), confirming significant development in the library collections of medical college libraries in Indore. The one-sample t-test shows a mean score of 2.588, with a t-value of 112.208, df = 509, and a p-value of .000, indicating high statistical significance. The 95% confidence interval (2.543 to 2.633) further confirms this positive growth. These

results highlight that libraries have notably expanded their physical and digital resources to better support academic and research needs over time.

Hypothesis5

H_{05}: There is no significant variation in the information-seeking behavior among users of medical college libraries in Indore.

H_{15}: There is a significant variation in the information-seeking behavior among users of medical college libraries in Indore.

Table 12 ANOVA table of Information-seeking behavior among users of medical college libraries

ANOVA					
Growth and Development					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	16.741	17	.985	11.312	.000
Within Groups	42.834	492	.087		
Total	59.575	509			

The ANOVA analysis provides strong evidence to support the alternative hypothesis (H_{15}) that there is significant variation in the information-seeking behavior among users of medical college libraries in Indore. The F-value of 11.312 with a p-value of .000 confirms that the differences in user group responses are statistically significant. With 17 degrees of freedom between groups and 492 within groups, the variation is meaningful and not due to chance. This leads to the rejection of the null hypothesis (H_{05}). The findings indicate that users differ in their information-seeking patterns based on factors like academic background, role, digital access, and familiarity with resources. Libraries should, therefore, offer customized services to meet these diverse user needs.

Hypothesis6

H_{06}: There is no significant need for future updates and changes in the medical college libraries of Indore.

H_{16}: There is a significant need for future updates and changes in the medical college libraries of Indore.

Table13 **ANOVA** table for future updates and changes in the medical college libraries

ANOVA					
Growth and Development					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	26.001	12	2.167	32.074	.000
Within Groups	33.574	497	.068		
Total	59.575	509			

The ANOVA test supports rejecting the null hypothesis (H_{06}) and accepting the alternative hypothesis (H_{16}), confirming a significant need for future development in medical college libraries of Indore. The F-value (32.074, p = .000) shows meaningful differences in user expectations. The large between-group variance (26.001) compared to the within-group variance (33.574) highlights varying perceptions of future needs. The findings emphasize the need for strategic improvements in infrastructure, digital resources, staff training, and user-friendly technologies to keep libraries relevant and effective.

5. FINDINGS

The demographic and institutional data collected from 510 respondents in medical college libraries of Indore provides critical insights into the composition and usage patterns of library users.

The majority of respondents are male (58%), with the highest representation from the 26–35 age group (40%). Designation-wise, Librarians, Assistant Librarians, and Library Assistants each form significant portions, indicating active participation from different staff roles.

Most users (63%) are graduates, with only 1% being research scholars, highlighting the need for academic and professional development opportunities.

Interestingly, 33% each reported having a Bachelor's or Master's degree in Library Science, while another 33% had no professional library qualification. Regarding establishment timelines, 56% of the libraries were founded post-2000, suggesting a trend toward newer institutions.

A substantial 74% believe there are only 1–5 medical college libraries in Indore, reflecting limited institutional spread.

The primary purpose of library usage is academic support (45%), followed by research and clinical reference, indicating that libraries serve multifaceted roles but are predominantly academic hubs.

6. CONCLUSION

The present study, entitled “The Growth and Development of Medical College Libraries in Indore, MP: A Study from 2011 to 2025,” provides a comprehensive and critical analysis of the evolution of medical college libraries (MCLs) over a decade marked by rapid technological advancement, shifting academic needs, and increased reliance on digital resources. Drawing on quantitative and qualitative data collected from 510 respondents across various medical institutions in Indore, the research has illuminated the multifaceted progress made in library infrastructure, resources, services, user engagement, and the integration of Information and Communication Technology (ICT). This study also critically evaluates how these institutions have responded to emerging demands in medical education and research while identifying gaps and recommending strategies for future development.

Over the study period, medical college libraries in Indore have shown clear signs of growth and modernization. The collection development in these libraries—comprising books, rare books, theses, bound volumes, digital resources, manuscripts, maps, and multimedia formats—has expanded significantly, with respondents affirming the positive changes. Statistical evidence derived from one-sample t-tests showed that the means for collection

variables were highly significant, rejecting the null hypothesis and confirming that consistent efforts were made to enhance the breadth and depth of library collections. This development reflects a sustained commitment to supporting the teaching, learning, and research missions of medical colleges, ensuring that users have access to a wide range of academic and clinical resources.

7. STUDY'S LIMITATION

1. The study is geographically limited to Indore and does not include other regions of India.
2. Only selected respondents were surveyed, possibly missing insights from other important user groups.
3. The study covers the period from 2011 to 2025, excluding recent post-pandemic developments.
4. Responses were self-reported, which may introduce bias and affect the accuracy of the findings.
5. Rapid technological advancements after 2025 are not reflected in this study.
6. The study focuses mainly on library users, omitting views from administrators and policy-makers.
7. Financial and budgetary data were not deeply explored due to limited institutional transparency.
8. The evaluation of library services is based on perception rather than actual usage statistics.
9. Infrastructure and facilities were assessed through feedback, without on-site physical verification.
10. No benchmarking was conducted with private or international medical libraries for comparative analysis.

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