

UTILIZATION OF ELECTRONIC RESOURCES IN ACADEMIC LIBRARIES: A STUDY OF NATUROPATHY AND YOGIC SCIENCE COLLEGE STUDENTS IN KARNATAKA

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Abstract

The present study examines the utilization of electronic resources among students of select Naturopathy and Yogic Science colleges in Bangalore, Karnataka, in light of the growing shift from print to digital information sources in academic libraries supporting health science education. Using a structured questionnaire administered to students from six select Naturopathy and Yogic Science colleges through stratified sampling, the study assesses the awareness, frequency of use, purpose, and preferences of students regarding available electronic resources such as e-journals, e-books, and online databases, along with the problems encountered in accessing them, including slow internet speed, lack of awareness, and inadequate infrastructure; the data collected were analyzed using simple statistical techniques such as percentage analysis to interpret patterns of e-resource utilization across the sample population. The findings reveal the extent to which electronic resources are integrated into the academic and research activities of Naturopathy and Yogic Science students, identify key gaps between resource availability and actual utilization, and offer suggestions for improving e-resource infrastructure, user orientation programs, and library services to enhance effective utilization among students in this specialized field of health science education.

Keywords: Electronic resources- E-resource utilization- Academic libraries- Naturopathy -Yogic Science colleges- Library services- Bangalore, Karnataka

1. Introduction

Academic libraries play a pivotal role in supporting the educational, clinical, and research needs of students pursuing specialized health science disciplines such as Naturopathy and Yogic Science. Unlike conventional medical education, this field integrates classical textual knowledge, clinical training, and holistic wellness practices, requiring students to draw information from a diverse range of sources for varied purposes. Students approach the library not merely for curriculum-related study but also for research work, clinical case preparation, competitive examination readiness, current awareness, and even personal health interests. Understanding why students seek information and how this purpose shifts across their years of study is essential for academic libraries to tailor collections, services, and outreach programs effectively. As students

progress from foundational academic years toward clinical and research-intensive final years, their information-seeking purposes evolve substantially, reflecting the changing academic and professional demands placed upon them.

2. Need for the Study

Naturopathy and Yogic Science colleges serve a unique student population whose information needs span classical texts, modern clinical evidence, and wellness literature. Libraries in this specialized domain must cater to purposes ranging from routine academic study to advanced thesis work and clinical patient case documentation. Without a clear understanding of how information-seeking purposes vary by year of study, libraries risk misallocating resources—over-investing in materials for one purpose while under-serving another. For instance, senior-year students engaged in clinical practice or dissertation work require access to different resource types than first-year students focused on curriculum-based learning. There is limited empirical research examining year-wise variation in the purpose of library use among Naturopathy and Yogic Science students specifically, making this study necessary to inform evidence-based library planning and service design in this niche academic field.

3. Objectives of the Study

- a. To identify the primary purposes for which students of select Naturopathy and Yogic Science colleges in Bangalore seek information from the library.
- b. To examine the variation in information-seeking purpose across different years of study
- c. To determine the relative importance of academic, research, competitive examination, current awareness, and personal wellness-related information needs among respondents.
- d. To provide suggestions for aligning library resources and services with the evolving information needs of students as they progress through their academic years.

4. Review of Related Literature

Kumar R (2025) made a study across five major Indian universities (Delhi University, Banaras Hindu University, Jawaharlal Nehru University, University of Hyderabad, and Panjab University) examined tendency, behaviour, preference, and disadvantages of e-resource use among 500 undergraduate students, postgraduate students, research scholars, and faculty members. The findings showed that more than 78 percent of respondents accessed e-resources regularly, with research scholars recording the highest daily usage at 70 percent, followed by postgraduate students at 40 percent. Lawrantine, F., Cheo, V. N., & Tabi, A. V. (2024). Studies awareness, access and usage of E-Resources by students of the University of Bamenda. The study found that a vast majority of students were unaware of the availability of subscribed electronic resources, though awareness of broad-based internet sources was higher, indicating a knowledge gap regarding institutional e-library services. The study concluded that access and usage of e-resources significantly enhanced students' academic output, and recommended intensified training and awareness campaigns. Viador, M. C., Ondoy, A. L., & Padua, J. G. (2025) made a descriptive study of 371 students at STI West Negros University found that (cite index) internet resources and books were the most preferred formats, while CDs and DVDs were the least used, reflecting students' preference for accessible and current information. It recommended that the university

library enhance internet connectivity, expand study spaces, and strengthen user training and faculty collaboration. Goel, N. K., Sarpal, S. S., Galhotra, A., & Abhadeep. (2012) studied About Library Usage by Undergraduate Medical Students in a Medical College in North India. Finding of the study is among the 235 students found that mainly visited the library to study or borrow books, with library services also including IT services and photocopying, though physical facilities were often reported as insufficient for extended use. Bhat, M. I., & Mudhol, M. V. (2014). Use of e-resources by Faculty members and students of Sher-E-Kashmir Institute of Medical sciences. This study surveyed faculty members and medical students of a Jammu and Kashmir medical institute using a questionnaire distributed to a random sample of faculty, postgraduate, and final-year undergraduate students to assess awareness and use of electronic journals, reports, and full-text resources. Ali, O., et al. (2024). Surveyed an artificial intelligence applications in educational settings: Challenges and strategies. This work informs the argument that the level of awareness and exposure of e-resources among user groups is crucial in identifying knowledge gaps that affect overall resource utilization. Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Made a study on Understanding the role of digital technologies in education: A review. This review established that academic level is closely associated with patterns of e-resource use, and that preferences for resource formats vary based on ease of use, relevance, and timeliness of information. Ruzegwa, M., & Msonde, S. (2021) surveyed and their study found that contrasting awareness levels, reporting that 58 percent of undergraduate students and 100 percent of postgraduate students were aware of available e-resources, with undergraduate students showing greater practical familiarity than postgraduates

5. Methodology

The present study adopted a descriptive survey research design to examine the utilization of electronic resources among students of select Naturopathy and Yogic Science colleges in Bangalore, Karnataka. There are Six Naturopathy and Yogic Science colleges were purposively selected for the study: Sri Dharmasthala Manjunatheshwara College of Naturopathy & Yogic Sciences, Sharada Yoga & Naturopathy Medical College, Tapovana Medical College of Naturopathy & Yogic Sciences, Alva's College of Naturopathy & Yogic Sciences, Government Nature Cure & Yoga College, and S-VYASA Deemed to be University.

The total population of students across these six colleges was 2,179. A stratified random sampling technique was employed to ensure proportionate representation from each college, with a sampling fraction of approximately 49–50 per cent applied uniformly across institutions. Accordingly, a total sample of 1,074 respondents was drawn: 265 from SDM College (47.32%), 125 from Sharada Yoga & Naturopathy Medical College (50.00%), 125 from Tapovana Medical College (50.00%), 211 from Alva's College (49.88%), 120 from Government Nature Cure & Yoga College (50.00%), and 228 from S-VYASA Deemed to be University (50.00%), yielding an overall sampling fraction of 49.29 per cent.

Data were collected using a structured questionnaire administered directly to the selected respondents across the six colleges. The questionnaire was designed to capture information on students' awareness, frequency of use, purpose, and problems encountered in utilizing electronic

resources available through their respective college libraries. The collected data were coded, tabulated, and analyzed using simple statistical techniques, primarily percentage analysis, to identify patterns of e-resource utilization across the sample population. The limitation of the study is Under Graduate students of these six colleges only taken and not included PG students and faculty of the colleges.

6. Analysis and Interpretation

**Table 1 Distribution of respondents based on year of study in Naturopathy and Yogic
Science Colleges**

Sl. No	Name of the Institution	I Year	II Year	III Year	IV Year	Total
1	SDM College of Naturopathy & Yogic Sciences	63 (23.77)	65 (24.53)	67 (25.28)	70 (26.42)	265
2	Sharada Yoga & Naturopathy Medical College	24.00	33 (26.40)	32 (25.60)	30 (24.00)	125
3	Tapovana Medical College of Naturopathy & Yogic Sciences	28 (22.40)	31 (24.80)	26 (20.80)	40 (32.00)	125
4	Alva's College of Naturopathy & Yogic Sciences	51 (24.17)	56 (26.54)	51 (24.17)	53 (25.12)	211
5	Government Nature Cure & Yoga College	23 (19.17)	30 (25.00)	36 (30.00)	31 (25.83)	120
6	S-VYASA Deemed to be University	51 (22.37)	53 (23.25)	59 (25.88)	65 (28.51)	228
	Total	246 (22.90)	268 (24.95)	271 (25.23)	289 (26.92)	1,074 (100)

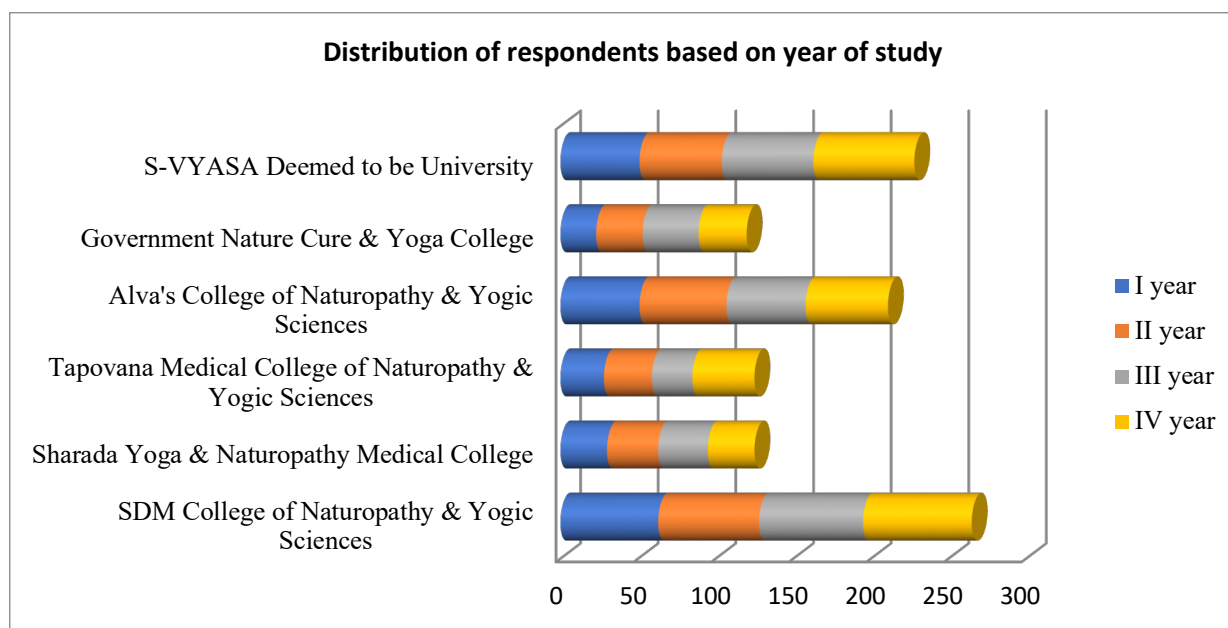


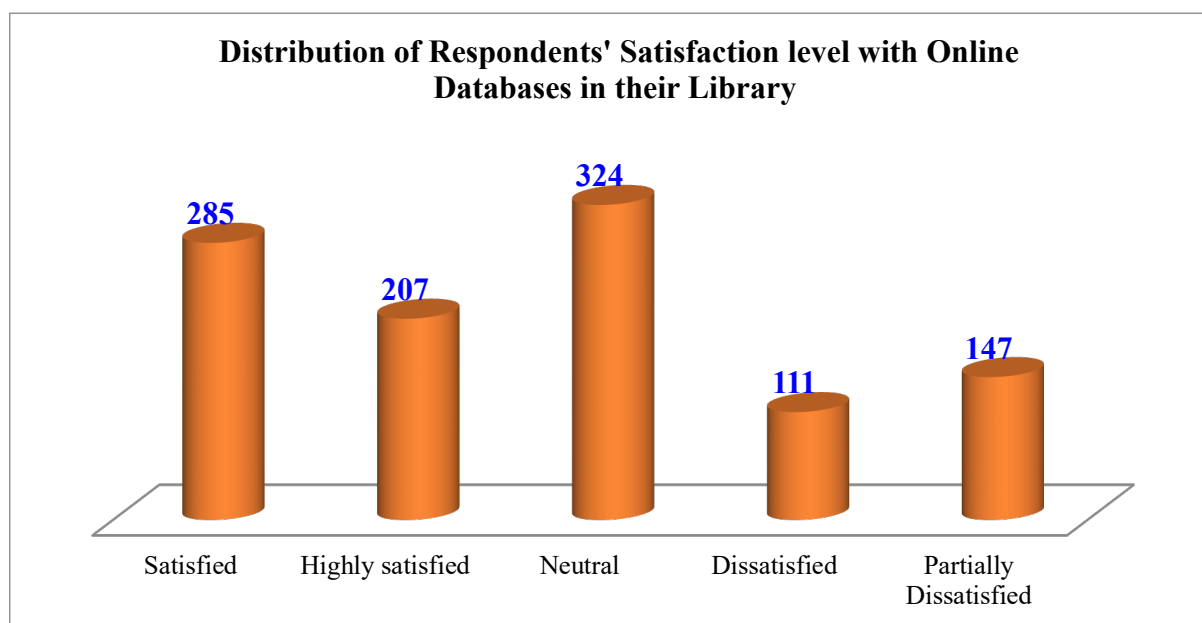
Table 1 explore the distribution of respondents across the four years of study was fairly balanced within each institution, with a marginally increasing proportion toward the senior years overall. At SDM College of Naturopathy & Yogic Sciences, representation rose steadily from 23.77% in I year to 26.42% in IV year, while Sharada Yoga & Naturopathy Medical College showed a relatively even spread, peaking in II year (26.40%). Tapovana Medical College of Naturopathy & Yogic Sciences displayed the widest variation among the six institutions, with IV year respondents forming 32.00% of its sample against just 20.80% in III year, suggesting a comparatively larger senior cohort. Alva's College of Naturopathy & Yogic Sciences maintained a near-uniform distribution across all four years (24.17%–26.54%), whereas Government Nature Cure & Yoga College showed the lowest I year representation (19.17%) and the highest III year representation (30.00%) among all colleges, indicating a skew toward mid-level students. S-VYASA Deemed to be University followed a pattern similar to SDM, with a gradual rise from 22.37% in I year to 28.51% in IV year. The table depicts among total 1,074 respondents, the year-wise distribution was 246 (22.90%) in I year, 268 (24.95%) in II year, 271 (25.23%) in III year, and 289 (26.91%) in IV year, reflecting a broadly proportionate representation of all academic years with a slightly higher concentration of senior (III and IV year) students, which may indicate better retention and continuity of enrollment as students progress through the naturopathy and yogic science programs.

Table 2. Distribution of Respondents' Satisfaction with Online Databases in their Library

Sl. No	Institution	Satisfied	Highly Satisfied	Neutral	Dis satisfied	Partially Dissatisfied	Total
1	SDM College	65(24.53)	46(17.36)	81(30.57)	27(10.19)	46(17.36)	265 (100)
2	Sharada College	36(28.80)	24(19.20)	39(31.20)	11(8.80)	15(12.00)	125 (100)
3	Tapovana College	24(19.20)	25(20.00)	51(40.80)	12(9.60)	13(10.40)	125 (100)

UTILIZATION OF ELECTRONIC RESOURCES IN ACADEMIC LIBRARIES: A STUDY OF NATUROPATHY AND YOGIC SCIENCE COLLEGE STUDENTS IN KARNATAKA

4	Alva's College	55(26.07)	45(21.33)	55(26.07)	23(10.90)	33(15.64)	211 (100)
5	Government College	30(25.00)	21(17.50)	41(34.17)	14(11.67)	14(11.67)	120 (100)
6	S-VYASA Deemed University	55(24.12)	46(20.18)	57(25.00)	24(10.53)	46(20.18)	228 (100)
	Total	265 (24.67)	207 (19.27)	324 (30.17)	111 (10.34)	167 (15.55)	1074 (100)



The table 2 presents the distribution of respondents' satisfaction with the online databases available in their college libraries across the six institutions surveyed. Combined positive satisfaction "Satisfied" and "Highly Satisfied" accounts for 45.81% of respondents (26.54% and 19.27%), while "Neutral" responses remain substantial at 30.17% again the single largest individual category. Combined dissatisfaction ("Dissatisfied" and "Partially Dissatisfied") stands at 24.03% (10.34% and 13.69%), indicating that roughly one-fourth of respondents perceive gaps in online database provision or accessibility.

At the institutional level, S-VYASA Deemed to be University recorded the highest "Satisfied" response (32.89%) among all institutions, reflecting relatively strong user experience with online databases there, though its combined dissatisfaction (21.93%) remains non-trivial. Tapovana College again shows the weakest overall satisfaction profile, with the highest neutrality (40.80%) and the lowest combined satisfaction (39.20%), reinforcing the pattern seen in the previous analysis and suggesting persistent gaps in database awareness or access at this institution. Government College similarly shows elevated neutrality (34.17%), consistent with earlier findings. The table depicts that the S-VYASA Deemed to be University recorded the highest "Satisfied" response (32.89%) among all institutions, reflecting relatively strong user experience with online databases. These results suggest that while a reasonable proportion of students find

online database access satisfactory, institutions particularly Tapovana College and Government College.

Table 3 Distribution of Respondents using Search engines for identification of their academic information

Sl. No .	Search Engine	SDM College	Sharada College	Tapovan a College	Alva's College	S-VYSA Universit y	Total	(%)
1	Google	202	86	84	136	135	643	40.57
2	Bing	42	24	22	23	25	136	8.58
3	Ask.com	32	32	15	25	26	130	8.20
4	DuckDuck	5	19	13	11	25	73	4.61
5	Brave Search	11	15	12	14	24	76	4.79
6	AOL Search	9	11	13	12	26	71	4.48
7	Naver	12	13	15	13	15	68	4.29
8	Yahoo	78	45	41	52	49	265	16.72
9	Startpage	11	13	9	10	19	62	3.91
10	Baidu	12	10	10	11	18	61	3.85
	Total	414	268	234	307	362	1585	100.00

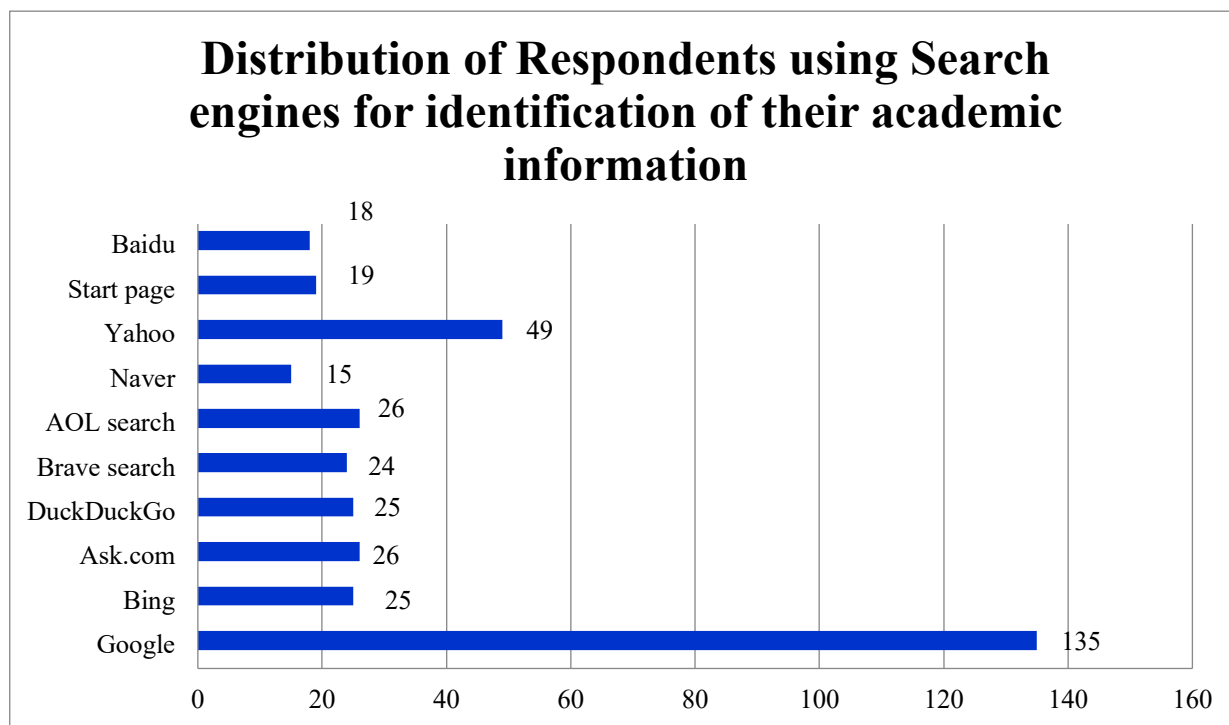


Table 3 shows the distribution of respondents according to the search engines used for identifying academic information. Google was the most widely used search engine, with 643 responses (40.57%), indicating that it was the preferred search engine among the respondents for locating academic information. Yahoo ranked second, with 265 responses (16.72%). Bing was used by 136 respondents (8.58%), while Ask.com accounted for 130 responses (8.20%).

The use of Brave Search was reported by 76 respondents (4.79%), followed by DuckDuckGo with 73 respondents (4.61%) and AOL Search with 71 respondents (4.48%). Naver was used by 68 respondents (4.29%), whereas Startpage and Baidu were used by 62 (3.91%) and 61 respondents (3.85%), respectively.

Overall, the findings indicate that Google was the dominant search engine for identifying academic information, accounting for more than two-fifths of the total responses. Yahoo occupied a distant second position, while the remaining search engines were used by comparatively smaller proportions of respondents. This suggests that college students strongly preferred Google as their primary gateway for searching and identifying academic information.

Table 4 Distribution of Respondents awareness on open access resources like DOAJ, NDLI, Shodhganga, ROAR, PubMed, AYUSH and other related to your field

Sl. No	Name of the Institution	Aware	Highly Aware	Some Extent Aware	Not Aware	Some Extent Not Aware	Total
1	SDM College	113 (42.6)	52 (19.6)	46 (17.4)	21 (7.9)	33 (12.50)	265 (100%)
2	Sharada College	29 (23.2)	27 (21.6)	25 (20.0)	14 (11.2)	30 (24.0)	125 (100%)
3	Tapovana College	25 (2.0)	31 (24.8)	29 (23.2)	17 (13.6)	23 (18.4)	125 (100%)
4	Alva's College	71 (33.6)	36 (17.1)	49 (23.2)	16 (7.6)	39 (18.5)	211 (100%)
5	Government College	26 (21.7)	29 (24.2)	26 (21.7)	16 (13.3)	23 (19.2)	120 (100%)
6	S-VYASA Deemed to be University	57 (25.0)	45 (19.7)	61 (26.8)	30 (13.2)	35 (15.4)	228 (100%)
	Total	321 (29.9)	220 (20.5)	236 (22.0)	114 (10.6)	183 (17.0)	1074 (100%)

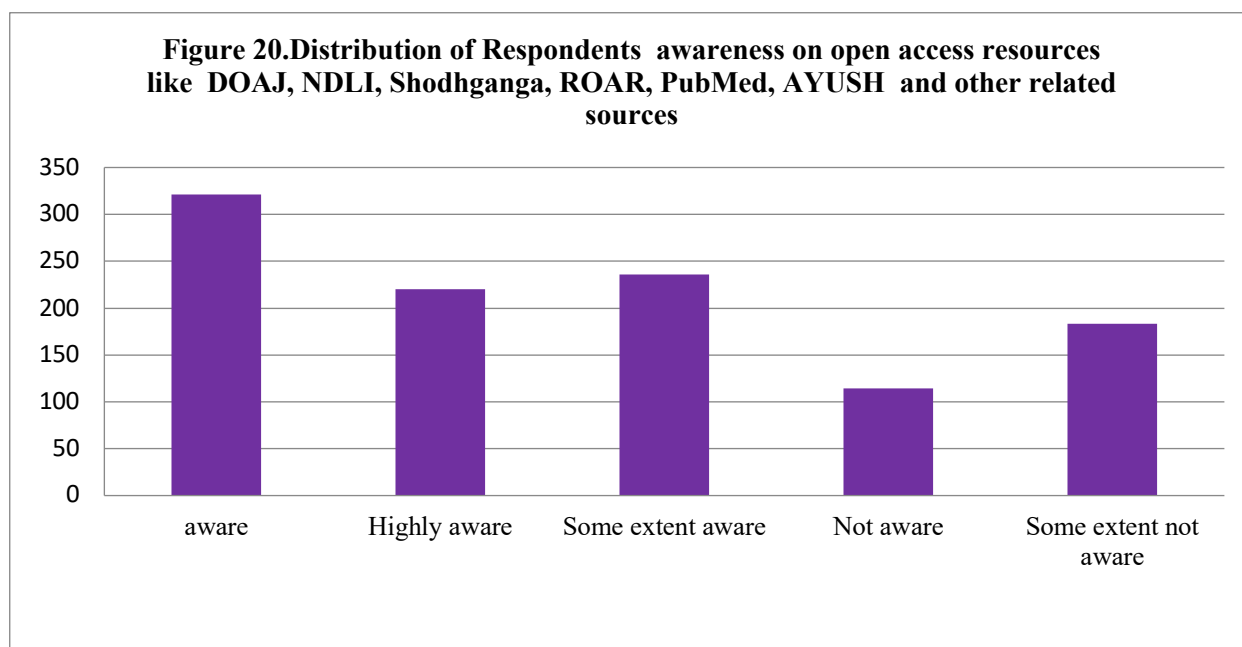


Table 4 shows that Respondents level of awareness about the open e-resources. Among the total respondents from SDM College shows the strongest overall awareness, with 42.6% of respondents reporting they are "Aware" the highest proportion among all institutions coupled with a relatively low "Not Aware" rate of 7.9%. This suggests SDM College respondents have comparatively better exposure to open access resources, possibly reflecting stronger library orientation programs or digital literacy initiatives. Alva's College follows a similar pattern, with 33.6% "Aware" and the lowest "Not Aware" percentage (7.6%) across all institutions, indicating relatively strong baseline awareness despite a fair proportion (18.5%) still falling into the "some extent not aware" category. Sharada College shows a comparatively weaker awareness profile, with only 23.2% "Aware" and the highest "Some Extent Not Aware" rate (24.0%) among all institutions. Tapovana College records the lowest "Aware" percentage (20.0%) of all institutions, alongside the highest "Not Aware" rate (13.6%) tied with Government College. This points to a clear need for targeted awareness programs at this institution. Government College mirrors Tapovana's pattern, with a relatively even spread across categories and a tied-highest "Not Aware" rate (13.3%), reflecting limited but not negligible engagement with e-resource literacy efforts. S-VYASA Deemed to be University shows the highest "Some Extent Aware" proportion (26.8%), suggesting respondents here have moderate, developing familiarity with e-resources rather than either strong awareness or complete lack of it potentially reflecting a university-level environment where exposure is emerging but not yet fully consolidated.

The data reveals a mixed picture of e-resource awareness among the 1,074 respondents across the six institutions, with 29.9% of the respondents are "Aware", 20.5% of the respondents are "Highly Aware", and 22.0% of the respondents are "Some Extent Aware" together indicating

that a majority (72.4%) of respondents possess at least some degree of awareness of open access e-resources.

Table 5 Distribution of Respondents' Awareness on Use of Citation/Reference Management Tools like Mendeley, Zotero, EndNote

Sl. No	Name of the Institution	Aware	Highly Aware	Some Extent Aware	Not Aware	Some Extent Not Aware	Total
1	SDM College	35 (13.21%)	26 (9.81%)	54 (20.38%)	79 (29.81%)	71 (26.79%)	265 (100%)
2	Sharada College	15 (12.00%)	16 (12.80%)	27 (21.60%)	43 (34.40%)	24 (19.20%)	125 (100%)
3	Tapovana College	19 (15.20%)	15 (12.00%)	33 (26.40%)	33 (26.40%)	25 (20.00%)	125 (100%)
4	Alva's College	35 (16.59%)	26 (12.32%)	53 (25.12%)	51 (24.17%)	46 (21.80%)	211 (100%)
5	Government College	19 (15.83%)	17 (14.17%)	29 (24.17%)	32 (26.67%)	23 (19.17%)	120 (100%)
6	S-VYASA Deemed to be University	36 (15.79%)	35 (15.35%)	52 (22.81%)	51 (22.37%)	54 (23.68%)	228 (100%)
	Total	159 (14.80%)	135 (12.57%)	248 (23.09%)	289 (26.91%)	243 (22.63%)	1074 (100%)

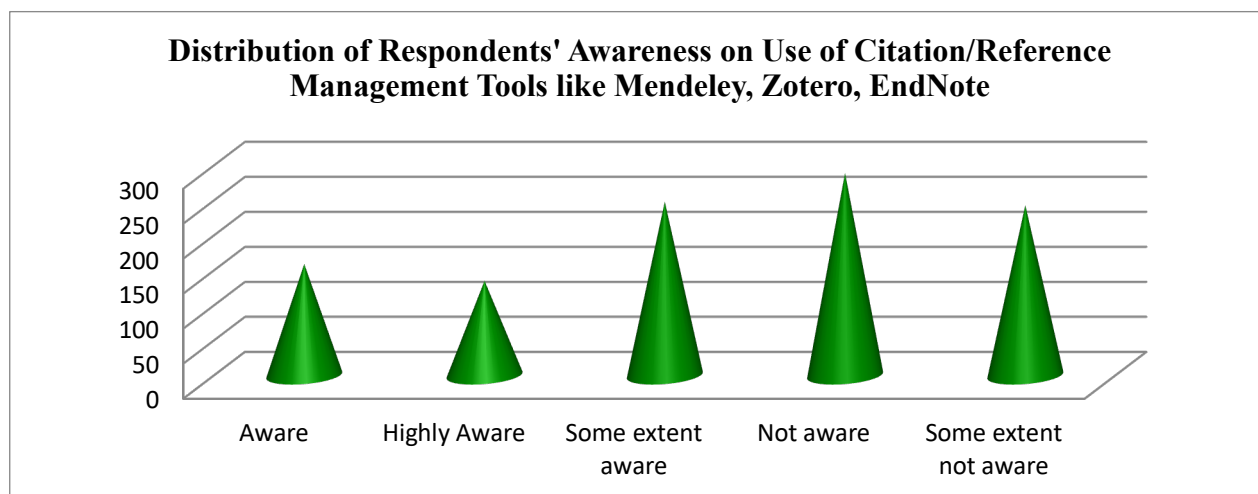


Table 5 depicts the distribution of respondents regarding their awareness of citation/reference management tools such as Mendeley, Zotero, and EndNote across the six selected institutions. Out of the total 1074 respondents, only 159 respondents (14.80%) reported

being "aware" and 135 respondents (12.57%) reported being "highly aware" of these tools, together constituting a mere 27.37% of the total sample. In contrast, a substantial proportion of respondents, 289 (26.91%), indicated that they were "not aware" of citation/reference management tools, while 243 respondents (22.63%) were only "aware to some extent" but not fully conversant with their usage. Additionally, 248 respondents (23.09%) reported being "aware to some extent."

Institution-wise, Sharada College recorded the highest percentage of "not aware" respondents (34.40%), followed by SDM College (29.81%), indicating a comparatively lower level of awareness among students of these two institutions. On the other hand, S-VYASA Deemed to be University reported the highest percentage of "highly aware" respondents (15.35%), suggesting relatively better exposure to citation management tools, possibly owing to institutional training or research orientation programmes.

The findings of the table reveals that awareness of citation/reference management tools remains inadequate among the majority of respondents, with more than half (49.54%) falling into the "not aware" and "some extent not aware" categories combined. This finding underscores the pressing need for structured information literacy programmes and hands-on training sessions on citation management tools such as Mendeley, Zotero, and EndNote, particularly for students engaged in academic research and thesis writing, to enhance their research efficiency and adherence to citation standards.

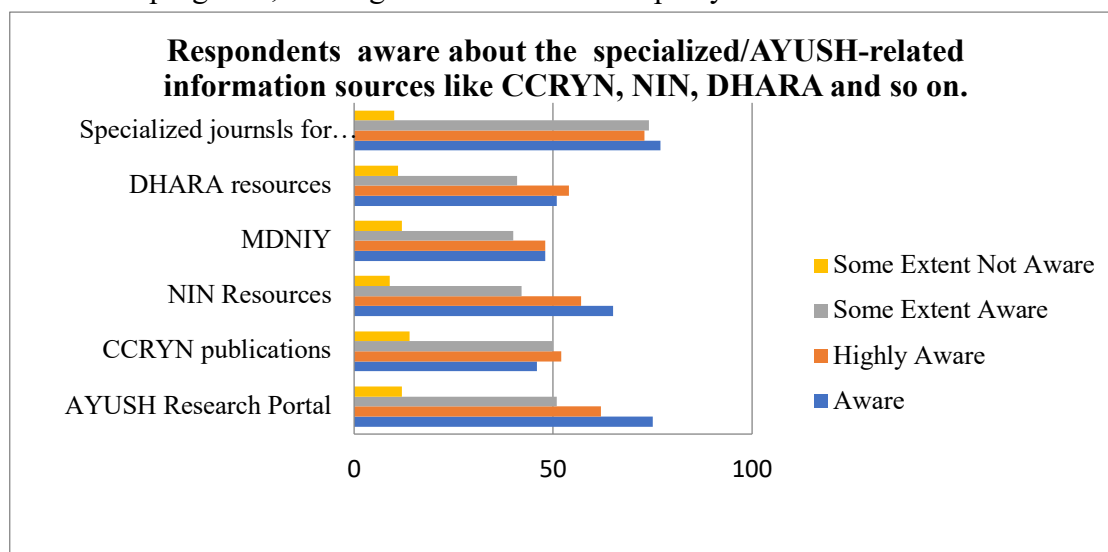
Table 6 Distribution of Respondents based on awareness about the s pecialized/ AYUSH-related information sources like CCRYN, NIN, DHARA and so on.

Sl. No	Name of the Institution	Aware	Highly Aware	Some Extent Aware	Some Extent Not Aware	Total
1	AYUSH Research Portal	75 (20.72%)	62 (17.92%)	51 (17.11%)	12 (17.65%)	200 (18.62%)
2	CCRYN Publications	46 (12.71%)	52 (15.03%)	50 (16.78%)	14 (20.59%)	162 (15.08%)
3	NIN Resources	65 (17.96%)	57 (16.47%)	42 (14.09%)	9 (13.24%)	173 (16.11%)
4	MDNIY	48 (13.26%)	48 (13.87%)	40 (13.42%)	12 (17.65%)	148 (13.78%)
5	DHARA Resources	51 (14.09%)	54 (15.61%)	41 (13.76%)	11 (16.18%)	157 (14.62%)
6	Specialized Journals for NY Sciences	77 (21.27%)	73 (21.10%)	74 (24.83%)	10 (14.71%)	234 (21.79%)
	Total	362 (100%)	346 (100%)	298 (100%)	68 (100%)	1074 (100%)

Table 6 shows that Column-wise percentages of each awareness category is distributed across the six institutions, revealing which sources dominate each response level. In "Aware"

category Specialized Journals for NY Sciences accounts for the largest share (21.27%), closely followed by AYUSH Research Portal (20.72%) and NIN Resources (17.96%). Together these three sources contribute nearly 60% of all "Aware" responses, indicating they are the most commonly recognized sources at a basic awareness level. CCRYN Publications contributes the smallest share (12.71%), reaffirming its comparatively limited reach. In "Highly Aware" category Specialized Journals for NY Sciences again leads (21.10%), followed by AYUSH Research Portal (17.92%) and NIN Resources (16.47%). In "Some Extent Aware" category Specialized Journals for NY Sciences dominates markedly here (24.83%), noticeably higher than its share in the other categories. In "Some Extent Not Aware" category CCRYN Publications holds the largest share (20.59%), followed by AYUSH Research Portal and MDNIY (17.65% each). CCRYN's disproportionately high presence in this "least aware" category despite its modest 15.08% share of the total respondent pool confirms it as the weakest-performing source in terms of student outreach.

The findings of the above table was the Specialized Journals and the AYUSH Research Portal are the backbone of student awareness, while CCRYN Publications lags in visibility and would benefit from targeted promotional interventions such as awareness workshops, library orientation programs, or integration into the naturopathy curriculum.



7. Conclusion

The present study reveals that electronic resources have become an integral component of the academic and research pursuits of students in Naturopathy and Yogic Science colleges in Bangalore, Karnataka, though their utilization patterns vary considerably across institutions and user groups. While a majority of respondents demonstrated awareness of e-journals, e-books, online databases, and other digital resources, actual usage remained moderate, largely confined to search engines and freely accessible web resources rather than subscribed or specialized databases relevant to naturopathy and yogic sciences. Infrastructural constraints such as inadequate computer terminals, slow internet connectivity, and limited bandwidth, coupled with insufficient orientation

and training programs, emerged as significant barriers restricting the effective use of electronic resources. Gender-wise and institution-wise variations were also observed, indicating that access and usage are shaped not only by resource availability but also by user competence and library support services. The findings underscore the need for academic libraries in this specialized field to strengthen their electronic resource infrastructure, conduct regular user-orientation and information literacy programs, and subscribe to discipline-specific databases in naturopathy and yoga, so as to bridge the gap between resource availability and actual utilization and thereby enhance the overall academic and research productivity of students in this field.

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