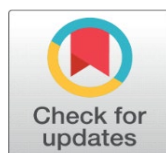


DIGITAL RESOURCES AND THEIR IMPACT ON INFORMATION-SEEKING TRENDS AMONG PHARMACY EDUCATORS IN GWALIOR-CHAMBAL, DIVISION

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ABSTRACT

This study aims to assess how digital resources influence teaching and research among pharmacy college teachers in the Chambal division. A total of 192 closed-ended questionnaires were distributed through Google Forms, resulting in 145 responses. The results show that pharmacy teachers frequently use digital resources to access current content and retrieve information efficiently, with a strong preference for online tools over traditional methods. The study emphasizes that college libraries should continue to expand digital resources tailored to users' needs. Nonetheless, challenges remain, such as the need for ongoing upgrades to digital literacy skills and managing information overload. To overcome these issues, the study recommends implementing ICT literacy modules in faculty development programs, ensuring access to premium databases and e-journals, and developing customized resource portals to reduce information overload. Further research is encouraged on emerging ICT tools like virtual labs, simulation-based learning, and artificial intelligence in pharmacy education.

Keywords: Digital Library, Pharmacy Educators, Information Seeking Practices, Information Retrieval

1. INTRODUCTION

In today's rapidly changing educational and technological context, digital resources have become essential to teachers' information-seeking habits. Pharmacy education, which is crucial in preparing future healthcare workers, has not remained untouched by the digital revolution. Integrating digital resources such as online databases, e-journals, educational websites, and multimedia tools provides unprecedented opportunities for pharmacy teachers to access current information, improve their teaching practices, and engage in ongoing professional development. Currently, we are living in an era where information for teaching, and research work by educators is now being accessed through digital means, hence the role of online resources has become very important in various fields including education. Currently, a wide range of information related to pharmacy education is becoming heavily dependent on online mediums to ensure that teachers remain aware of the latest advances in pharmacy science and pharmaceutical practice. Thus, it is very important to understand pharmacy teachers' digital information-seeking behavior to make educational activities more effective. Currently, there has been significant progress in the field of pharmacy education and research in India, which

has contributed significantly to developing a qualified workforce required for the pharmaceutical and healthcare industries. The study of pharmacy spans a wide range of academic specialties. (Deshmukh, P 2024).

This research aims to investigate the impact of digital resources on the information-seeking practices of pharmacy educators. This study aims to provide useful information about the emerging role of digital resources in pharmacy education by investigating their frequency of use, preferred digital tools, perceptions of accessibility and convenience, and the comparative effectiveness of digital versus traditional resources. Furthermore, recognizing the obstacles and barriers experienced by educators will lead to solutions for increasing the uptake and effective use of digital resources, ultimately contributing to the improvement of pharmacy education and the preparation of competent healthcare professionals.

2. REVIEW OF LITRATURE

It is axiomatic that the researcher needs a literature survey review while doing research. Without a study of literature related to the research area, the task of the researcher becomes like shooting an arrow in the dark. The first and foremost responsibility of any planned research project is to provide the theoretical and practical background to the study by reviewing the related literature. Therefore, the literature review is a critical evaluation and synthesis of previous research on a certain issue. Literature review Your ability to summarize and synthesize previous studies on a specific topic reflects your mastery of the subject matter and facilitates the learning process.

A study conducted by Almemann, A. (2024) explored the transformative impact of digitalisation on the global pharmaceutical sector. A study conducted by K. Hitoshi (2021) studied the information-seeking behaviour of medical students in Sri Lanka. A study conducted by Ali, A. (2020) sought to explore postgraduate students' information-seeking behaviour in digital environments. A study conducted by Alex N. Elsacks (2019) sought to evaluate work-based learning (WBL) initiatives within clinical pharmacy education. A study conducted by Nwanepi, A. I. (2016) explored the impact of digital preservation of information resources in libraries. Vafe, A. H. (2015) analysed the web retrieval tools used by lecturers as well as the resources preferred by senior academics. A study conducted by Jha, X., (2015) researched the topic Understanding Information Retrieval in Digital Libraries. A study conducted by de Groot, S. L., (2014) examined the information-seeking behaviour of lecturers in the Faculty of Health Sciences.

2.1. OBJECTIVE

- 1) To identify pharmacy educators' access to digital resources for research and teaching.
- 2) To find out about the quality and reliability of information obtained from digital resources by pharmacy educators.
- 3) To identify the primary barriers faced by pharmacy educators when using digital resources.
- 4) To find out pharmacy educators' satisfaction with information obtained from digital resources.

3. SCOPE AND LIMITATION

The scope of this study is limited to all the teachers teaching D.Pharma, B.Pharma, and M.Pharma in all the private pharmacy colleges located in Gwalior and Chambal divisions. Teachers teaching in 40 private pharmacy colleges in the Gwalior Chambal division will be included. This study will determine the Impact of Digital Resources on Pharmacy Educators' Information-Seeking practices located in Gwalior Chambal division. A questionnaire-based survey will be planned to obtain feedback from teachers for research work.

4. RESEARCH METHODOLOGY

Survey methodology was used in this study, for research work, questionnaires were distributed through Google Form to 192 teachers teaching in 14 pharmacy colleges located in Gwalior Chambal division. Out of the distributed questionnaires, 145 questionnaires were received. The survey consists of open-ended, Likert scale as well as multiple choice questions. During the investigation, teachers were asked questions on topics such as online digital tools currently

used, impact of online resources on information seeking behavior, etc. Data was collected/edited and evaluated with utmost care using various tools.

5. DATA ANALYSIS AND INTERPRETATION

After collecting the responses, the data was organized and statistical analysis and interpretation were done based on the characteristics of the responses, the data was presented in tabular format. Hence, it can be said that at the time of questionnaire distribution, the existing Pharmacy faculty members were fully considered, but during questionnaire collection, the number of respondents decreased as can be seen in the table below.

Table 1 Pharmacy teachers' response rate

	Total no. of participant	Total number of received	Percentage
Faculty members	192	145	75.5%

It is clear from Table 1 that in this study, out of the total 192 questionnaires sent to the teachers teaching in 14 pharmacy colleges located in the Gwalior Chambal division, 145 responses were received i.e. 75.5%.

Table 2 Gender

S.No.	Gender	Response	Percentage
01	Male	109	75.1
02	Female	36	24.8
	Total	145	100%

Table 02 Proportion of teachers teaching in pharmacy colleges in Gwalior Chambal division This study. This study is based on the answers of male teacher and female teacher respondents, out of which 75.1% are male teacher respondents and 24.8% are female teacher respondents.

Table 3 Designation-Wise Distribution of Pharmacy Teacher

S.No.	Gender	Response	Percentage
01	Professor	13	8.9%
02	Associate Professor	50	34.4%
03	Assistant Professor	82	56.5%
	Total	145	100%

Table 03 is based on the responses of Professors, Associate Professors, and Assistant Professors teaching in pharmacy colleges in the Gwalior-Chambal division in this study. Respondents include 8.9% Professors, 34.4% Associate Professors and 56.5% Assistant Professors.

Table 4 Advantages of using online resources teaching and research

S.No.	Advantage Online resources	Response	Percentage
01	Easier access to up-to-date information	55	37.9%
02	Greater variety of sources	25	17.2%
03	Convenience of access from anywhere	23	15.9%
04	Enhanced ability to collaborate with peers	24	16.5%
05	Cost-effectiveness	18	12.41%
	Total	145	100%

Table 04 benefits and purpose of using online resources for teaching and research by the faculty teaching in pharmacy colleges of Gwalior Chambal division in this study. 37.9% of Teachers have Easy access to latest information 17.2% Teachers Greater variety of sources, 15.9% of Teachers have Ease of access from anywhere, 16.5% of Teachers Increased ability to collaborate with colleagues, 12.41% of Teachers use online resources for cost-effectiveness.

Table 5 ICT tools currently use for information seeking

S.No.	ICT tools	Response	Percentage
01	online database	124	27.2%
02	e journals	86	18.9%
03	search engines	86	18.9%
04	pharmacy association websites	45	9.9%
05	online educational resources	69	15.1%
06	social media platforms'	46	10.1%
	Total	456	100%

Table 05 shows the ICT tools used by teachers to obtain information as 27.2% of teachers use online databases, 18.9% of teachers use e-journals, 18.9% of teachers use search engines, 9.9% of teachers use pharmacy association websites, 15.1% of teachers use online educational resources and 10.1% of teachers use social media platforms.

Table 6 Access digital resources

S.No.	Access digital resources	Response	Percentage
1.	College library subscription	58	40.0%
2.	Personal subscription	20	13.8%
3.	Free online resources	67	46.2%
	Total	145	100%

Table 06 shows the Access digital resources teachers use to obtain information: 40.2% of college library subscriptions, 13.8% of teachers' Personal subscriptions, and 46.2% of teachers' Free online resources.

Table 7 Verifying the credibility of online information

S.No.	credibility of online information	Response	Percentage
1.	Checking author credentials	26	17.9%
2.	Reviewing citation count	64	44.1%
3.	Cross checking with multiple sources	16	11.0%
4.	Using peer reviewing sources	39	26.9%
	Total	145	100%

Table 07 shows the Access digital resources 17.9 %Teachers Checking author credentials, 44.1% teachers review citation count, 11.0% teachers cross-checking with multiple sources, 26.9% teachers use peer-reviewed sources.

Table 8 Adequacy of digital resources to meet academic and research needs

S.No.	meet academic and research needs	Response	Percentage
1.	Yes, completely	83	57.2%
2.	Yes, with some limitations	41	28.2%
3.	No, more resources are needed	21	14.8%
	Total	145	100%

Table 08 illustrates the adequacy of digital resources. 57.2% of teachers completely agree, 28.3% of teachers partially agree, and 14.0% of teachers disagree, indicating that more resources are needed.

Table 9 Online resources impacted information-seeking behavior

S.No.	Impact of online resources	Response	Percentage
01	Drastically Improved	77	53.1%
02	Significantly Improved	30	20.7%
03	Moderately Improved	22	15.2%
04	Slightly Improved	12	8.3%
05	No Impact	04	2.8%
	Total	145	1000%

Table 9 shows impact of online resources on information-retrieval behavior. 53.1% educators improved a lot, 20.7% of teachers improved significantly, 15.2% of teachers improved moderately, 8.3% of teachers improved slightly, and 2.8% of teachers had no impact of online resources on information-seeking behavior.

Table 10 Use online database more than traditional sources for information

S.No.	Use of online database	Response	Percentage
01	Yes	138	95.2%
02	No	07	4.8%
	Total	145	100%

Table 10 shows the statistics of teachers using online databases more than traditional sources for information. 95.2% of teachers use online databases more than traditional sources for information, and 4.8% of teachers use traditional sources more than online databases for information.

Table 11 Challenges in accessing pharmacy program information using ICT tools

S.No.	Challenge of ICT tools	Response	Percentage
01	limited access to ICT infrastructure	29	20.0%
02	information overload	50	34.5%
03	difficulty in evaluating information quality	35	24.1%
04	lack of ICT skills and training	13	9.0%
05	un skilled library staff	18	12.4%
	Total	145	100.0

Table 11 show the challenges seeking pharmacy program information using ICT tools as 20.0% of teachers have limited access to ICT infrastructure, 34.5% of teachers face information overload, 21.1% of teachers face difficulty in evaluating the quality of information, 9.0% of teachers lack ICT skills and training, 12.4% teachers face the problem of unskilled library staff.

Table 12 Overall impact of ICT information seeking behavior

S.No.	Impact of ICT	Response	Percentage
01	very positive	60	41.37%
02	Positive	74	51.03%
03	Neutral	11	7.5%
	Total	145	100.0%

Table 12 show the 41.37% of teachers are very positive, 51.03% of teachers are positive, and 7.5% of teachers are neutral towards the overall impact of ICT on information-seeking behavior.

Table 13 Satisfied quality of content available through ICT based information sources

S.No.	Satisfaction of quality ICT sources	Response	Percentage
01	very satisfied	38	26.2%
02	Satisfied	97	66.9%

03	Neutral	9	6.20%
04	Dissatisfied	1	0.68%
	Total	145	100.0%

Table 13 shows the number of people satisfied with the quality of content available through ICT-based information sources, 26.2% very satisfied, 66.9% satisfied, 6.20% neutral, and 0.68% dissatisfied with the quality of content available through ICT-based information sources.

Table 14 Satisfied availability and accessibility of ICT based information sources

S.No.	Satisfaction of availability ICT sources	Response	Percentage
01	Very Satisfied	37	25.5%
02	Satisfied	96	66.2%
03	Neutral	7	4.8%
04	Dissatisfied	5	3.4%
	Total	145	100.0

Table 14 shows the number of people satisfied with the availability and accessibility of ICT- based information sources, 25.5% are very satisfied, 66.2% are satisfied, 4.8% are neutral and 3.4% are dissatisfied with the availability and accessibility of ICT- based information.

6. FINDINGS

Pharmacy faculty widely use online resources for teaching and research, primarily due to ease of access to up-to-date information, diverse sources, remote accessibility, and cost savings. Most relied on online databases, e-journals, and search engines, while a smaller group used social media and pharmacy association websites. Free resources were most common, followed by college library and personal subscriptions. Credibility was evaluated through citation counts, peer-reviewed sources, and author credentials. Over half agreed digital resources met pedagogical needs, and most reported improved information retrieval. Nearly all preferred online databases over traditional sources. Challenges included information overload, limited ICT infrastructure, lack of skills, and unskilled staff. Despite this, faculty perceptions of ICT were largely positive, with high satisfaction regarding the quality, availability, and accessibility of ICT-based content.

7. CONCLUSION

This study explores the impact of digital resources on pharmacy educators' information-seeking practices. Digital resources have enabled more efficient information access, thereby facilitating enhanced teaching, research, and professional development. Compared with traditional sources, digital sources have not only improved the speed of information retrieval but also broadened the scope of information search, allowing pharmacy educators to incorporate broader perspectives and innovations into their curriculum and curricula. However, reliance on digital resources also presents challenges, including the need for educators to constantly update their digital literacy skills and the inconvenience of information overload. In conclusion, digital resources have provided significant benefits to pharmacy educators' curriculum and information-seeking practices.

CONFLICT OF INTERESTS

None.

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REFERENCES

- Kori, D., & Patil, U. K. (2024). Evaluating Digital Competency Among Pharmacy Students: A Study Of Selected Pharmacy Institutes In India. *Journal Of Information And Knowledge*, 219-230. Doi:10.17821/Srels/2024/V61i4/171280
- Marasinghe, M., Kasturiratne, K., & Chandratilake, M. (2023). Information Seeking Behavior Of Medical Students In Sri Lanka. *Information Development*. Doi:10.1177/02666669231179398
- Kamada, H., Martin, J. R., Slack, M. K., & Kramer, S. S. (2021). Understanding The Information-Seeking Behavior Of Pharmacy College Faculty, Staff, And Students: Implications For Improving Embedded Librarian Services. *Journal Of The Medical Library Association*, 109(2). Doi:10.5195/Jmla.2021.950
- Akhtar, G. (2020). Impact Of Digital Media On Information Needs And Seeking Behavior Of University Teachers In Pakistan Behavior Of University Teachers In Pakistan. *Digitalcommons@University Of Nebraska - Lincoln*. https://www.academia.edu/87863349/Impact_Of_Digital_Media_On_Information_Needs_And_Seeking_Behavior_Of_University_Teachers_In_Pakistan?sm=B
- Isaacs, A. N., Walton, A. M., Gonzalvo, J. D., Howard, M. L., & Nisly, S. A. (2019). Pharmacy Educator Evaluation Of Web-Based Learning. *The Clinical Teacher*, 16(6), 630-635. <https://doi.org/10.1111/Tct.13003>
- Jawala, S., & Rai, D. V. (2018). The Impact Of Information And Communication Technology (Ict) On Community Pharmacy. *International Journal Of Growth And Development*, 01. <https://doi.org/10.25081/Ijgd.2018.V2.56>
- Nwanapayi, A. I. (2016). Impact Of Digital Preservation Of Information Resources On Academic Libraries. *International Journal Of Scientific Research In Computer Science, Engineering And Information Technology*, 1(2), 25-27. https://www.academia.edu/94844255/Impact_Of_Digital_Preservation_Of_Information_Resources_On_Academic_Libraries?sm=B
- Wafaye, A. H. (2015) Impact Of Technology On Information Seeking Behaviour Of Digital Immigrants: A Comparative Study Of Senior Academicians In J&K. *International Journal Of Knowledge Management And Practices*, 3(2). <https://doi.org/10.21863/Ijkmp/2015.3.2.007>
- Michael, E. (2014). An Overview Of Users Information Seeking Behaviour On Online Resources. *Iosr Journal Of Humanities And Social Science*, 19(1), 09-17. https://www.academia.edu/68659002/An_Overview_Of_Users_Information_Seeking_Behaviour_On_Online_Resources?sm=B
- https://www.researchgate.net/publication/361886194_The_Assessment_Of_Information_Literacy_Skills_Among_Faculty_Members_Of_The_Medical_Colleges_In_Khyber_Pakhtunkhwa-Pakistan
- Information Seeking Behavior Paper.Pdf 385-Article Text-548-1-10-20230616.Pdf
- Abanikannda_Mutahir_Oluwafemi_Wplyw_Improwizacji_Zasobow_Kształcenia_Na_Kształcenie_Biologii_W_Szkolach_Srednich_Starszych_W_Poludniowym_Okregu_.Pdf [Ipindianjlibrsciinftechnol-7-2-113-123 \(6\).Pdf](https://doi.org/10.48009/3_Iis_2022_108)
- Doi: https://doi.org/10.48009/3_Iis_2022_108
- Tripathi, S. M. (1993). *Sandharv Avam Soochna Seva Ke Naveen Aayam*. Y K Publishers, Agra.
- Bor, H. (1986). *Information Science Principle And Prectices*. Starling Publishing House, New Delhi
- Bikika, L. T. (2002). *Information Needs, Information Seeking Behavior And Users (2nd Ed.)*. Ess Ess, New Delhi.
- John W, B. (2005). *Research In Education (9th Ed.)*. Prentice Hall Of India.
- Asthana, B., & Shrivastava, S. (2016). *Research Methodology*. Agarwal Publications.
- Roy, P. (2014). *Anusandhan Parichay*. Laxmi Narayan Agarwal, Agra.
- Mla Handbook For Writers Of Research Papers*. (2009). East West Pv.T Ltd.
- Sansanwal, D. S. (2020). *Research Methodology And Applied Statistics (1st Ed.)*. Shipra Publications.
- Ranjit Kumar. (2007). *Research Methodology (2nd Ed.)*. Pearson Education.
- Best, J. W. (2007). *Research In Education (9th Ed.)*. Pearson Education, Delhi.