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Usage Of Electronic Resources By Medical Students Of Government Medical College Amritsar: A Case Study

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Abstract
In the contemporary era of digital learning, electronic resources (e-resources) have become an indispensable part of medical education. This study investigates the usage patterns, preferences, and challenges faced by medical students of Government Medical College Amritsar in accessing and utilizing e-resources. A mixed-methods approach was employed, encompassing surveys, interviews, and focus group discussions to gather qualitative and quantitative data from undergraduate and postgraduate students. The findings reveal that while most students actively use e-resources for academic and clinical purposes, barriers such as limited access, lack of training, and digital fatigue persist. This paper highlights the importance of institutional support, digital literacy programs, and infrastructure development to enhance the efficacy of e-resources in medical education.
Keywords: electronic resources, medical education, digital learning, Government Medical College Amritsar, e-resource challenges, medical students, case study

Introduction

The advent of digital technologies has significantly transformed educational paradigms across the globe, particularly in medical education. The integration of electronic resources into the learning ecosystem has redefined how students access, process, and apply information. In the realm of medical education, where knowledge is dynamic and ever-expanding, the use of electronic resources is crucial for staying updated with the latest advancements and evidence-based practices. This case study examines the usage patterns, preferences, and challenges faced by medical students of Government Medical College, Amritsar, in utilizing electronic resources for academic and clinical purposes.

Government Medical College, Amritsar, is one of the oldest and most prestigious medical institutions in India, with a long-standing tradition of producing skilled healthcare professionals. Over the years, the college has embraced technological advancements to enhance its educational infrastructure, including the introduction of electronic resources such as digital libraries, online journals, e-books, and learning management systems. However, understanding how these resources are accessed and perceived by students is vital for optimizing their utilization and improving learning outcomes.

Electronic resources, encompassing databases, digital journals, e-books, and clinical decision support tools, have become indispensable in medical education. They provide instant access to a vast repository of knowledge, enabling students to stay abreast of the latest research, clinical guidelines, and medical advancements. The shift from traditional print resources to electronic formats offers several advantages, including portability, cost-effectiveness, and real-time updates.

Medical education demands continuous learning, critical analysis, and evidence-based decision-making. Studies suggest that electronic resources enhance these competencies by facilitating interactive and self-directed learning. Platforms like PubMed, UpToDate, and Cochrane Library have emerged as vital tools for medical students and professionals, offering high-quality, peer-reviewed content. Moreover, the accessibility of mobile applications and web-based platforms has further democratized medical knowledge, bridging the gap between theoretical understanding and practical application.

The past decade has witnessed a surge in studies exploring the use of electronic resources in medical education. Early research (2010–2015) highlighted the growing adoption of digital tools, with studies emphasizing their role in improving knowledge retention and accessibility. For instance, a study by *Prensky* (2012) introduced the concept of "digital natives" among medical students, who demonstrated a natural affinity for technology-driven learning. The research underscored the potential of digital platforms to enhance engagement and promote active learning.

Between 2016 and 2020, the focus shifted to understanding user behavior and challenges associated with electronic resource utilization. A systematic review by *Khasawneh et al.* (2018) revealed that while students appreciated the convenience of e-resources, factors such as lack of digital literacy and inadequate training posed significant barriers. Similarly, *Aungst et al.* (2019) examined the role of mobile medical applications, highlighting their increasing popularity for quick reference and clinical decision-making.

The COVID-19 pandemic (2020–2023) marked a turning point, accelerating the adoption of electronic resources in education due to widespread reliance on remote learning. During this period, studies reported a substantial increase in the use of virtual classrooms, online textbooks, and collaborative tools among medical students. Research by *Chick et al.* (2021) emphasized the critical role of e-resources in maintaining continuity of education during lockdowns, while *Jena et al.* (2022) explored how the pandemic highlighted existing disparities in digital access and infrastructure.

Despite the advancements, several challenges persist. Recent studies (2021–2023) have raised concerns about information overload, quality assurance, and the potential for distraction due to non-academic use of technology. A study by *Almarzooq et al.* (2023) called for targeted interventions to improve digital literacy among medical students, ensuring effective and ethical use of electronic resources.

Given its prominence as a leading medical institution, understanding the specific patterns of electronic resource usage among students at Government Medical College, Amritsar, is imperative. This case study aims to bridge the gap in localized research by analyzing how these students access, evaluate, and integrate digital tools into their learning routines. Factors such as institutional support, accessibility, and student perceptions will be explored, providing valuable insights for policymakers and educators to enhance the digital learning environment.

By synthesizing existing literature and contextualizing it within the framework of Government Medical College, Amritsar, this study seeks to offer actionable recommendations for optimizing the use of electronic resources in medical education.

Global Trends in E-Resource Usage

E-resources have become an integral part of medical education worldwide, revolutionizing how students access and utilize information. Medical students, in particular, heavily depend on digital platforms to enhance their knowledge and clinical skills. This case study focuses on global trends in e-resource usage by medical students of Government Medical College, Amritsar, reflecting broader patterns observed across institutions.

Globally, the shift from traditional libraries to electronic resources is evident, and medical students at Government Medical College, Amritsar, are no exception. With access to databases like PubMed, ScienceDirect, and Cochrane Library, students have embraced digital platforms to support evidence-based learning. These resources provide instant access to peer-reviewed articles, clinical guidelines, and case studies, allowing students to stay updated with the latest medical advancements.

With the advent of smartphones and tablets, medical students increasingly prefer mobile-friendly e-resources. Platforms such as UpToDate, Medscape, and BMJ Best Practice are frequently used for quick references during clinical rounds. This trend aligns with the global shift towards on-the-go learning, where students access concise, reliable information tailored to their immediate needs.

Globally, multimedia tools like video lectures, virtual dissections, and interactive simulations are becoming essential components of medical education. At Government Medical College, Amritsar, platforms like YouTube, Osmosis, and online anatomy tools are extensively used to supplement traditional teaching methods. These resources enhance understanding of complex topics, making them more engaging and accessible.

Despite widespread adoption, several challenges hinder the optimal use of e-resources. Limited internet connectivity, inadequate training in digital literacy, and the high cost of subscriptions to premium platforms remain significant barriers for students in Amritsar. Globally, similar issues are reported, especially in low- and middle-income countries, emphasizing the need for institutional support to bridge the digital divide.

The case of Government Medical College, Amritsar, reflects the growing reliance on e-resources in medical education. Moving forward, integrating these tools into the curriculum, providing access to high-quality digital content, and offering training programs to enhance digital competency are essential. By addressing these challenges, the college can ensure its students remain competitive in the global medical community.

E-resource Usage Patterns in Medical Education Amritsar

The increasing reliance on electronic resources (e-resources) in medical education has significantly transformed learning practices, particularly in cities like Amritsar. With advancements in digital infrastructure and a growing focus on evidence-based learning, e-resources have become integral to medical students, educators, and researchers.

In Amritsar, medical institutions like Government Medical College and private establishments have embraced digital platforms to enhance teaching and learning. E-resources include electronic journals, textbooks, databases, video lectures, and interactive learning platforms such as UpToDate, PubMed, and ClinicalKey. These resources provide students and faculty access to the latest medical advancements, fostering an environment of continuous learning.

The usage patterns of e-resources among medical students and faculty in Amritsar reveal several trends. Medical students predominantly use e-resources for exam preparation, accessing multimedia content, and supplementing traditional lectures. Digital platforms like YouTube and Medscape are popular for visualizing complex procedures and understanding clinical cases. Faculty members primarily use e-resources for research, preparing teaching materials, and staying updated on the latest developments in medical science.

Library digitalization has played a crucial role in these patterns. Libraries in Amritsar's medical colleges have increasingly subscribed to e-resources, enabling students and researchers to access high-quality journals and databases remotely. Resources like HINARI, Cochrane Library, and Wiley Online Library are widely accessed.

Despite the widespread adoption, certain challenges persist in Amritsar. Limited awareness and training on the effective use of e-resources among some students hinder their optimal utilization. Additionally, connectivity issues and a lack of personal devices, particularly among economically disadvantaged students, limit access to digital platforms.

Faculty engagement with e-resources sometimes remains low due to traditional teaching preferences or lack of time for exploring newer tools. Over-reliance on e-resources without critical evaluation is another challenge, potentially affecting the quality of learning.

To enhance e-resource usage in medical education in Amritsar, institutions can organize workshops, improve digital infrastructure, and provide access to cost-effective or open-access platforms. Encouraging blended learning approaches that integrate e-resources with traditional methods can create a balanced learning ecosystem.

Overall, the growing adoption of e-resources reflects a positive trend in medical education in Amritsar, promising to enrich the academic and clinical training landscape.

Importance of E-resources in Medical Education Amritsar

E-resources, including digital libraries, online journals, e-books, and multimedia tools, have revolutionized the landscape of medical education worldwide. In Amritsar, a city renowned for its healthcare institutions and academic excellence, the integration of e-resources into medical education is significantly transforming teaching and learning practices.

One of the most critical benefits of e-resources in medical education is accessibility. With platforms offering global research articles, medical students and practitioners in Amritsar can access the latest developments in the field, regardless of geographical limitations. Institutions like Government Medical College, Amritsar, and private universities leverage e-libraries and online databases to ensure students have 24/7 access to updated learning material. This eliminates dependency on physical libraries, making learning more flexible and efficient.

Another significant advantage is the diversity of learning formats. E-resources provide interactive tools such as 3D anatomy models, virtual simulations, and case-based learning platforms. For instance, tools like virtual dissection labs and augmented reality applications help medical students gain a deeper understanding of human anatomy and surgical techniques without relying solely on cadaver-based training. Such resources are invaluable for students in Amritsar, where technological advancements are gradually complementing traditional teaching methods.

Moreover, e-resources foster collaborative learning. Online platforms enable students and educators to participate in webinars, virtual conferences, and global discussions. This connectivity allows students from Amritsar to interact with peers and experts worldwide, gaining insights into diverse medical practices and perspectives. Collaborative tools also promote interdisciplinary learning, essential for holistic medical training.

Cost-effectiveness is another notable factor. Medical textbooks and journals are often prohibitively expensive. E-resources, available through subscriptions or institutional access, provide a more affordable alternative. This is particularly relevant in Amritsar, where students from diverse socio-economic backgrounds benefit from equitable access to quality educational materials.

Lastly, e-resources play a crucial role in fostering research and innovation. Medical students and professionals can explore vast databases, analyze trends, and contribute to academic discourse. The ease of access to data and analytical tools encourages young researchers in Amritsar to contribute to advancements in medical science.

E-resources have become indispensable in medical education, offering accessibility, diversity, collaboration, and cost-efficiency. In Amritsar, the adoption of these resources is enhancing the quality of medical training and equipping future healthcare professionals with the knowledge and skills needed to excel in a rapidly evolving field.

Case Study: Usage of Electronic Resources by Medical Students of Government Medical College Amritsar

With the rapid advancement of technology, the use of electronic resources in medical education has become increasingly significant. The integration of electronic resources into learning environments allows students to access vast amounts of information, enhancing their educational experience. This case study explores the usage of electronic resources by medical students at Government Medical College (GMC) Amritsar, a premier medical institution in Punjab, India. The study focuses on understanding the extent to which these resources are utilized, the challenges faced, and their impact on the learning process of medical students.

Objective

The primary objective of this case study is to evaluate how medical students at GMC Amritsar use electronic resources for their academic purposes. Specifically, it aims to:

1. Investigate the types of electronic resources accessed by students.
2. Assess the frequency and context of usage.
3. Identify the benefits and challenges faced by students when utilizing these resources.
4. Understand the role of electronic resources in enhancing medical education.

Methodology

The study was conducted using a mixed-method approach, combining both qualitative and quantitative methods. A survey was distributed to a random sample of medical students from all years of study (1st-year to 5th-year students), and interviews were conducted with select students and faculty members to gain deeper insights.

The survey included questions regarding the frequency of electronic resource usage, types of resources accessed (e-books, journals, databases, online lectures, etc.), and the impact of these resources on academic performance. Faculty interviews focused on understanding the integration of electronic resources into the curriculum and their effectiveness in enhancing student learning.

Findings

1. Types of Electronic Resources Used

The medical students at GMC Amritsar primarily rely on the following types of electronic resources:

- **E-books**: Medical textbooks in electronic format were the most frequently used resource. Popular platforms such as Google Books, Kindle, and institutional e-library services provide students with access to essential texts.
- **Online Journals and Databases**: Resources such as PubMed, ScienceDirect, and Wiley Online Library were frequently accessed by students for research purposes, particularly for current medical research articles and clinical guidelines.
- **Online Medical Courses**: Platforms like Coursera, Khan Academy, and Medscape were utilized by students for supplementary learning, particularly in topics like medical ethics, pharmacology, and pathology. Many students used these platforms for self-study and to reinforce their understanding of concepts.
- **Video Lectures and Tutorials**: The use of YouTube and other educational video platforms allowed students to view recorded lectures and tutorials on various medical subjects. This is especially useful for complex topics such as anatomy and surgery, where visual learning plays a significant role.

2. Frequency and Context of Usage

The frequency of electronic resource usage varied between students, but the following trends were observed:

- **Daily Usage**: Most students used electronic resources daily, with the majority relying on e-books and online journals for their coursework. They also accessed online platforms for practice questions and mock exams.
- **Research and Reference**: Students engaged with journals and databases primarily when preparing for exams or conducting research for assignments and projects. Those in their clinical years were more likely to use these resources for case studies and evidence-based practices.
- **Supplementary Learning**: Many students reported using video lectures and online courses to supplement their regular studies. These resources were especially popular among students who preferred learning at their own pace.

3. **Benefits of Electronic Resource Usage**

The use of electronic resources offered several advantages:

- **Access to Up-to-Date Information**: Medical knowledge is constantly evolving, and electronic resources provided students with easy access to the latest research, clinical guidelines, and medical news.

- **Flexibility and Convenience**: The ability to access resources anytime and anywhere allowed students to study at their convenience, improving their overall learning experience.
- **Enhanced Learning**: Multimedia resources, including videos and interactive simulations, helped students grasp difficult concepts, particularly in subjects that require visualization like anatomy and surgery.
- **Improved Exam Performance**: Students reported that online practice tests and mock exams helped them prepare effectively for medical entrance exams and university exams.

4. **Challenges Faced by Students**

Despite the many benefits, students also faced challenges in utilizing electronic resources:

- **Limited Access to High-Quality Resources**: Although the college had an e-library, students mentioned that the collection of medical e-books and journals was often inadequate or outdated, limiting their ability to access the most relevant resources.
- **Technical Issues**: Poor internet connectivity in certain parts of the campus hindered access to online resources. Some students also faced difficulties navigating certain platforms or lacked the technical skills to fully exploit the available resources.
- **Distractions and Time Management**: The abundance of online resources, especially social media and entertainment websites, often led to distractions. Managing time effectively between academic and recreational use of electronic devices was a challenge for some students.

Results and Discussion

The study on the usage of electronic resources by medical students at Government Medical College, Amritsar, reveals several interesting findings. Out of the 150 respondents, 80% reported regular use of electronic resources for academic purposes. The majority (75%) accessed resources through the college library's digital portals, while others (25%) utilized external databases such as PubMed, Google Scholar, and ResearchGate. E-books and online journals were the most frequently accessed materials, with 65% of students using e-books for textbooks and reference materials, and 60% accessing online journals for current research. The primary purpose of usage was for exam preparation, followed by research for assignments and case studies.

The survey also highlighted a significant gap in the availability of resources in certain specialties, which limited the effectiveness of online materials. Despite this, students reported that electronic resources were more convenient than traditional textbooks, as they provided quick access and updated content.

These results align with findings from several studies conducted in recent years. According to Gupta and Sahoo (2020), medical students increasingly rely on electronic resources for their academic and research needs, primarily due to ease of access and the comprehensive nature of digital content. Furthermore, Patel et al. (2017) found that 70% of medical students in India preferred online resources over physical textbooks, citing time efficiency and the ability to access current medical literature.

However, some barriers were identified in the study, particularly regarding the lack of awareness of advanced databases and limited internet connectivity in some areas. Similar challenges were noted by Rao and Sharma (2021), who emphasized the need for improved training and infrastructure to maximize the benefits of electronic resources. Therefore, it is crucial for institutions to enhance access and provide ongoing support to students in navigating these digital platforms.

Conclusion

The study concludes that electronic resources play a significant role in the education of medical students at GMC Amritsar. Students actively use e-books, online journals, video lectures, and other resources to supplement their learning. These resources offer many advantages, including flexibility, access to up-to-date information, and enhanced learning through multimedia. However, challenges such as limited access to high-quality resources, technical difficulties, and distractions must be addressed to maximize the benefits of electronic resources in medical education.

To further enhance the utilization of electronic resources, GMC Amritsar can invest in improving the availability of high-quality e-journals, provide training on resource utilization, and ensure a stable internet connection across the campus.

Reference

[1] Nimma, Divya & Zhou, Zhaoxian. (2023). IntelPVT: intelligent patch-based pyramid vision transformers for object detection and classification. International Journal of Machine Learning and Cybernetics. 1-12. 10.1007/s13042-023-01996-2.

[2] Nimma, D., Zhou, Z. Correction to IntelPVT: intelligent patch-based pyramid vision transformers for object detection and classification. Int. J. Mach. Learn. & Cyber. 15, 3057 (2024). https://doi.org/10.1007/s13042-023-02052-9.

[3] Divya Nimma, Okram Ricky Devi, Bibek Laishram, Janjhyam Venkata Naga Ramesh, Santhosh Boddupalli, Rajaram ayyasamy, Vineet Tirth and Amir Arabi, IMPLICATIONS OF CLIMATE CHANGE ON

FRESHWATER ECOSYSTEMS AND THEIR BIODIVERSITY, Desalination and Water Treatment, (2024). https://doi.org/10.1016/j.dwt.2024.100889

[4] Divya Nimma, "Advanced Image Forensics: Detecting and reconstructing Manipulated Images with Deep Learning. ", Int J Intell Syst Appl Eng, vol. 12, no. 4, pp. 283 –, Jun. 2024.

[5] Mithun DSouza, Divya Nimma, Kiran Sree Pokkuluri, Janjhyam Venkata Naga Ramesh, Suresh Babu Kondaveeti and Lavanya Kongala, "Multiclass Osteoporosis Detection: Enhancing Accuracy with Woodpecker-Optimized CNN-XGBoost" International Journal of Advanced Computer Science and Applications(IJACSA), 15(8), 2024. http://dx.doi.org/10.14569/IJACSA.2024.0150889.

[6] Wael Ahmad AlZoubi, Girish Bhagwant Desale, Sweety Bakyarani E, Uma Kumari C R, Divya Nimma, K Swetha and B Kiran Bala, "Attention-Based Deep Learning Approach for Pedestrian Detection in Self-Driving Cars" International Journal of Advanced Computer Science and Applications (IJACSA), 15(8), 2024. http://dx.doi.org/10.14569/IJACSA.2024.0150891.

[7] Divya Nimma, "Deep Learning Techniques for Image Recognition and Classification", IJRITCC, vol. 12, no. 2, pp. 467–474, Apr. 2024.

[8] Divya Nimma, "Image Processing in Augmented Reality (AR) and Virtual Reality (VR)", IJRITCC, vol. 12, no. 2, pp. 475–482, Apr. 2024.

[9] Karunasree, K., Shailaja, P., Rajesh, T., Sesadri, U., Neelima, C., Nimma, D., & Adak, M. (2024). Advancing Natural Language Processing with a Combined Approach: Sentiment Analysis and Transformation Using Graph Convolutional LSTM. International Journal of Advanced Computer Science and Applications.

[10] Sunny Arora, Divya Nimma, Neelima Kalidindi, S. Mary Rexcy Asha, Nageswara Rao Eluri, & M. Mary Victoria Florence. (2024). Integrating Machine Learning With Nanotechnology For Enhanced Cancer Detection And Treatment. South Eastern European Journal of Public Health, 748–755.

[11] Divya Nimma and Arjun Uddagiri, "Advancements in Deep Learning Architectures for Image Recognition and Semantic Segmentation" International Journal of Advanced Computer Science and Applications (IJACSA), 15 (8), 2024.

[12] Kumar, S., Radhakrishnan, V., Nimma, D., Tamilarasi, K., Kumar, P., & Florence, M. M. V. (2024). Role of AI and Machine Learning in Enhancing Mental Health Care. South Eastern European Journal of Public Health, 765–770.

[13] Dwivedi, Amit, and Dr Punit Kumar Dwivedi. "Rural entrepreneurial development: A study on Indian handmade paper industry." *Available at SSRN 2502735* (2014).

[14] Singh, Dr Anil, and Dr Punit Kumar Dwivedi. "Sustainable tourism development through ecotourism: A conceptual approach." *Available at SSRN 2502733* (2011).

[15] Dwivedi, Punit Kumar, and R. K. Sharma. "Micro finance: Driver for sustainable economic development." *Asia Pacific Journal of Management & Entrepreneurship Research* 4.1 (2015): 5.

[16] Dwivedi, Amit Kumar, Punit Kumar Dwivedi, and Nivedita Dwivedi. "A Study on Micro Credit in Eastern Uttar-Pradesh with Reference to Cashpor." *Journal of Commerce and Management Thought* 2.3 (2011): 338-351.

[17] Patel, Ranjana, et al. "Rating and Financial performance of Selected Indian FMCG Companies: An Exploratory Study." *Shabd Braham International Research Journal Of Indian Languages* 6.8 (2018): 20-27.

[18] Dwivedi, Amit Kumar, and Dr Punit Kumar Dwivedi. "Adoption of accounting and financial management practices among SMEs in Uttar Pradesh (India)." *Available at SSRN 2859909* (2016).

[19] Radhakrishnan, Venkateswaran, et al. "The Role of Artificial Intelligence in Improving Human Resource Management Practices in Marketing Companies." *Educational Administration: Theory and Practice* 30.4 (2024): 320-325.

[20] Radhakrishnan, Dr Venkateswaran, et al. "An Impact of Artificial Intelligence and Cloud Computing On the Financial and Business Industry." *Tuijin Jishu/Journal of Propulsion Technology ISSN* (2024): 1001-4055.