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Assessing the Significance of Digital Information Tools on the Information-Seeking Behavior of Medical Practitioners: A Focus on Leukemia Literature

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ABSTRACT: The rapid integration of digital information tools has transformed the information-seeking behavior of medical practitioners, particularly in highly specialized and research-intensive domains such as leukemia care. This study examines the significance, utilization patterns, and perceived effectiveness of various digital information tools—including Electronic Health Records (EHRs), Clinical Decision Support Systems (CDSS), online medical databases, mobile health applications, telemedicine platforms, and social media—in shaping clinical decisions and access to leukemia-related literature. Findings indicate that EHRs (25%) and medical databases (20%) are the most frequently used tools, valued for their accuracy, relevance, and ability to provide timely, evidence-based information critical for leukemia diagnosis, treatment planning, and patient monitoring. CDSS, mobile applications, and telemedicine also contribute meaningfully by supporting diagnostic accuracy, improving workflow efficiency, and enabling accessibility of care. However, concerns related to interoperability, integration with existing systems, and variable content quality—particularly in mobile apps and social media—limit their optimal use. The assessment further reveals that while digital tools significantly enhance practitioners' engagement with up-to-date leukemia research, differences in usability, accuracy, and system compatibility influence their overall impact on clinical practice. The study concludes that strengthening interoperability frameworks, standardizing information tools, and expanding training for healthcare workers can substantially enhance the utility and reliability of digital platforms. Improved integration of these tools is essential for supporting informed clinical decision-making, advancing leukemia care, and promoting a technologically adaptive healthcare environment.

KEYWORDS: Digital Information Tools; Information-Seeking Behavior; Medical Practitioners; Leukemia Literature; Electronic Health Records (EHRs); Clinical Decision Support Systems (CDSS); Medical Databases; Mobile Health Applications; Telemedicine; Health Informatics; Evidence-Based Practice; Digital Health Literacy; Artificial Intelligence in Healthcare.

I. INTRODUCTION

The information tools' implementation significantly influenced the information-seeking behavior of the medical practitioners. The general shift is that information tools increased and continued engagement with the sources of information. They are used and looking for the latest research, correlation, outcomes, etc., regarding the treatment of patient s. The behavior was changed by the information tools, and in this context, it is related directly to the fact that information tools change medical practice in a revolutionary manner. Information tools are important in leukemia due to a number of reasons. First and foremost, it is necessary to mention that it is important to deliver immediate and appropriate data. They are essential in the behavior of the medical practitioners due to the fact that the vast majority of them who practice the treatment of leukemia are looking for recent researches and trials. In other words, the tools are essential for the medical practitioners since they allow changing specific elements of their methodology. The role of information tools is significant, as they are important for making the outcomes of the changes positive for the medical professionals (Lazarus et al., 2020). In the case of leukemia, information tools are critical. This is the case because the treatment of the leukemia patients should be based on the recent research, trials, and appropriate comparisons. Proper

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delivery of such data changes the operations of the medical professionals and ensures that they have a positive effect on the outcomes of their patients.

In conclusion, the role of information tools in the behavior of medical practitioners is essential for the overall development of medical knowledge and patient health status (Garg et al., 2006). The constant interaction between the technology sphere and the medical industry proves the need for ongoing adaptation and usage of the information tools in favor of the best possible outcomes for both parties. The importance of these tools in the medical area needs to be stated and evaluated accordingly for the prosperous future of healthcare.

II. TYPES OF INFORMATION TOOLS IN MEDICAL PRACTICE

Within developed healthcare environments, information tools or simply informational technologies play the vitally important role. Their purpose is to improve the quality of care provided, as well as the speed of clinical response, and overall workflow optimization. These different types of sub systems can include a variety of technologies from simple medical patient records to complex AI diagnostic systems. All of these technologies are uniquely important to the system allowing the practitioners to access and handle information significantly better (Guo et al., 2023).

a) Electronic Medical Records and Their Role in Patient Care

Electronic Medical Records are digital versions of patients' paper charts and have become an integral part of modern healthcare. Specifically, it is a real-time, comprehensive, and secure record of a patient's visit that includes patient demographics, progress notes, problems, medications, vital signs, past medical history, immunization, lab data, radiology reports, and more (Quigley et. al., 2024). This information is immediately available to authorized healthcare staff, which allows for better patient care by providing patients' data in one easy to read place. One of the primary advantages of EMRs is that they can reduce the risk of errors and make medical records more accurate (Given, et al., 2023). By decreasing the risk of manual data entry mistakes, EMRs make the patient's information more reliable and help with precise diagnosis and treatment. Specifically, they help make such decisions by providing healthcare professionals with access to a patient's data and also with clinical decision support systems that include reminders about potentially harmful drug interactions. This can be especially important in emergency departments or in situations where the clinician does not have enough information.

First, these systems can assist with better management of the patients. For example, when patient appointment, or medication refill, or some follow-up testing is due, EMR can remind of that both the practitioner and the patient. Continuous follow-up is especially good for such ambulatory care sensitive conditions as chronic cases; Okunola (2021) shares that patient follow-up reminders improve treatment compliance and prognosis. Second, these systems can assist in managing cutting-edge information and some data analytic and feed sharing software. For example, the following are needed when urgent care patients have to see multiple specialists and the information from the blood test has to be handled by both the blood test officer and the patient's primary healthcare doctor (Lozano et al., 2023). They can additionally assist in analysis of multiple features and monitoring programs success in public health and making policies to follow.

b) Online Databases and Medical Journals (e.g., PubMed, Medline)

Online databases and medical journals are useful resources for every healthcare provider who is interested in knowing more about recent research and pharmaceutical products. Moreover, every healthcare professional should comprehend the progress in the field of medicine. Physicians could refer to online databases and digital journals to seek peer-reviewed research articles, systematic reviews, and clinical guidelines, as evidenced by Yang et al., (2023). One of the most popular online databases is PubMed, which is a free resource that stores biomedical literature as well as research papers. The use of online databases, such as Medline, is also widespread. Although Medline can also be accessed through PubMed, it is an independent bibliographic database (Assaye et al., 2023). Medline is far more concentrated and contains only 5,200 academic journals. This resource focuses on several aspects, such as life sciences, biomedicine, and clinical medicine. The value of Medline is highlighted by its selective nature. Unlike PubMed, most references contained within Medline are of the highest quality available. Both online databases are useful resources and can help medical practitioners locate relevant studies in a timely fashion (Choi, & Jeong, 2021).

c) Clinical Decision Support Systems (CDSS)

CDSS has several functions related to medical consultations and helps to increase the accuracy of diagnostics. By making the analyses of patient data including symptoms, lab results, and other medical records, this tool generates some options of different checks. In case of any difficulties or potential options related to some diseases and their

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dangers, the CDSS can suggest further tests or possible complications (Parija,et al, 2020). For instance, if there are some symptoms of possible respiratory system problems, it can be recommended that there may be lung carcinoma or asbestosis. It is the most effective function of CDSS as it helps to avoid typical mistakes and concentrates on some rare diseases that doctors may not consider in a usual consultation.

d) Mobile health apps and wearable technology

Mobile health apps and wearable technology have transformed the health sector in the way of their delivery and access instead. This phenomenon allows patients to manage their health issues as well as present and analyse the real-time data obtained promptly. For example, mobile health applications, also known as a smartphone or tablet applications, or mHealth apps are software which offers a wide range of medical services. Mobile health applications can provide telemonitoring, health education, drug delivery schedule or order, and making an appointment services, that generally includes the monitoring or tracking a wide range of information, e.g., blood pressure, glucose levels, physical activity, and sleeping habits (Daei, et al., 2020). Apart for monitoring health conditions, patients can also input their data. For this reason, they stay active participants in the health management process. Mobile health apps engage the patients and allow them to be active and in better control of their health. For instance, a person may have been diagnosed with diabetes or hypertension (Sundell et al., 2022). They can use one of these applications to note down their daily blood sugar or pressure level, and other information they had to monitor. In addition, they receive an application notification to take medication and learn about their condition by tracking specific records, or use special educational portals concerning the health issue. Consequently, these shows how mobile health applications are a great gadgets positively affecting the healthcare system.

e) AI as Diagnostic Tools

Artificial intelligence has developed ways to be implemented in the healthcare sphere, and one of the most common implementations is through diagnostic tools. AI-driven diagnostic tools use machine learning algorithms, natural language processing, and other AI technologies to analyze input data and make it possible for physicians to make an accurate diagnosis (Geda, 2021).

Medical imaging is one of the most promising applications of any AI in diagnostics. Specifically, AI can be used to analyze images from X-rays, CT scans, MRIs, mammograms, and other relevant modalities in order to detect anomalies that may be indicative of cancer, fractures, cardiovascular diseases, and so on. This may be made possible by higher levels of accuracy and reduced time required for interpreting the images, and, overall, considerable earlier discovery of health issues. Furthermore, AI allows analyzing genomic data for the purposes of personalized medicine. When the genetic makeup of a particular patient is studied, and mutations or other patterns may indicate danger of certain health concerns, machines may be used to predict whether a patient will suffer and recommend the most suitable treatments. This is particularly important to such highly specialized fields as oncology, in which precise diagnostics and treatment allow to change the approach to the problem of locating and treating the disease (Covolo et al., 2022). Finally, AI technology is also used with electronic health records, as well as other types of clinical data, in order to recognize patterns, predict outcomes, and recommend treatments. For instance, with such technology, it is possible to analyze the EHR of a patient and assess the likelihood of their being readmitted to the hospital, the risk of them getting complications of the disease, or personalized treatment options. Finally, the problem of access to diagnostics is alleviated with AI-driven diagnostic tools used in provision of disease detection mobile applications in unserved areas may be another related solution.

III. ASSESSMENT OF TYPES OF INFORMATION TOOLS IN MEDICAL PRACTICE

Information tools are an integral part of modern medicine allowing providing better patient care, making better decisions, and, overall, enhancing the efficiency of different medical processes. The data tables 2.1 provide a clear picture of the current usage of various information tools by medical practitioners and their assessment in terms of apa. The results obtained demonstrate that electronic health records are the most popular type of information tools which are distributed in 25% of the used sources. In the modern era, EHR is the most essential aspect of healthcare provision since it is the principal type of tools storing and keeping patients' information. By using it, every medical worker can store information about every patient alongside treatment histories and contamination concerns. These tools are used by clinicians to provide patient care and detail the best practice to follow from previous interactions and treatments thus enabling the optimal delivery of healthcare across various providers. Another most popular type of tools registered by the survey is the medical databases which cover 20% of the results. These include the original sources like PubMed and the systematic review tools provided via the Cochrane Library. These tools store vast amounts of information starting from study and clinical trial results, containing hundreds of thousands of peer-reviewed medical articles, or other

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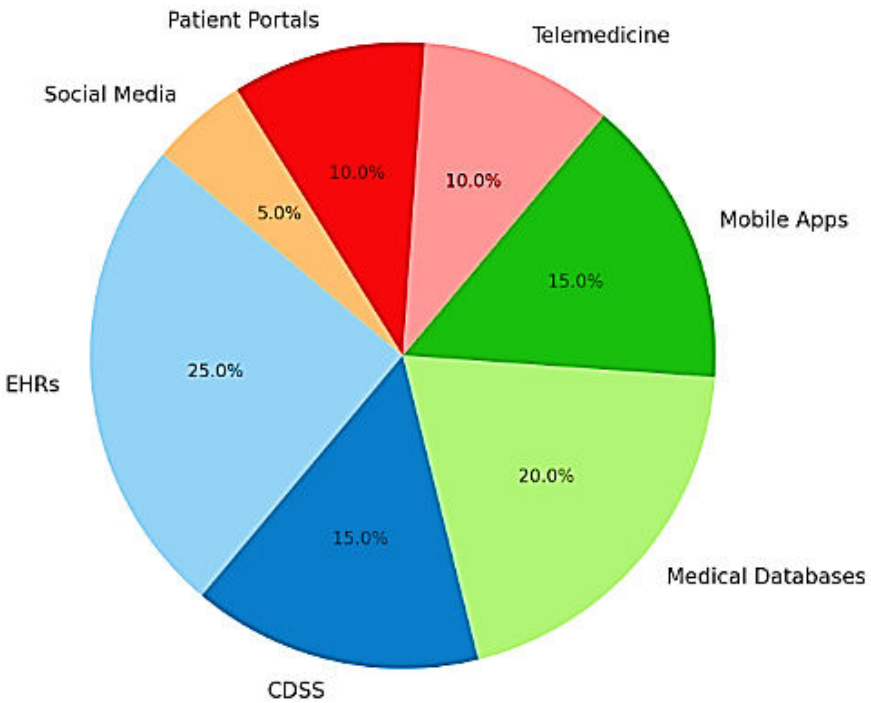
materials not being subject to the above description. The databases are essential for healthcare practitioners as they allow them to stay updated on the latest findings and enable them to use this knowledge in their practice.

Table 2.1

Information Tool	Usage Distribution (%)
EHRs	25
CDSS	15
Medical Databases	20
Mobile Apps	15
Telemedicine	10
Patient Portals	10
Social Media	5

It can be seen that the most popular tools are clinical decision support systems and mobile apps, constituting 15% of the total use. The former can provide the highest value since it is capable of making suggestions on the basis of evidence at the point of care for all medical professionals. As a result, the system supports clinical decisions that are made on behalf of the patient, which are typically more individualized and relevant. The latter type of the tool is far more varied, which results from its significant practical use to clinicians. They are often used as drug reference materials or implicit assistants, such as those used for calculating cocktail guides or certain medical grades. At the same time, telemedicine platforms and patient portals are currently the least-used tools, with only 10% of the responses. The benefits of the former are its vital role in the virtual management of patients and the limited emergence capacity after the COVID-19 pandemic. At the same time, the main advantage of patient portals is the use of the tool to provide access to their health information to patients, as well as communication opportunities with practitioners. Finally, the least common tool is social media/online communities, with only 5% of the responses. Thus, such platforms are primarily used for less formal purposes, such as case discussions and peer support.



Comparison of Information Tools Based on Key Criteria

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The second table 2.2. compares different information tools by criteria and analyzes their key advantages and disadvantages. EHRs obtain almost the maximum scores for all criteria apart from integration. These results show that while being one of the most important tools for healthcare, these systems can have some shortcomings in terms of interoperability with other information tools. CDSS achieves good scores across all criteria, with the only exception again being integration. For Medical Databases, the most characteristics scores are relevance and accuracy due to their nature of a tool accumulating peer-reviewed medicine. Understandably, it is more challenging for these databases to be integrated into systems, with their integration score being. Finally, Mobile Apps has the highest ease of use score; however, such characteristics as relevance and accuracy for this tool are still slightly lower than for other tools. Similarly to medical databases, it is still somewhat less relevant to discuss mobile apps in the context of an integrated system, and their utility is conditioned by the quality and correctness of their content.

All info tools have been rated well, which can be explained by their wide application in the given professional area, healthcare, and their importance for this field. Moreover, telemedicine platforms are consistently highly rated leading to 7.33 points, which is a strong reflection of their significance in the modern world. Its to believe that they are very relevant to this type of info tool and can be also effective because of the possibility to consult remotely and save a lot of time for flow sheets, diagnoses, and patient care while their application is relatively simple, which is also associated with 8 points. Patient portals are also consistently highly rated leading to 7.33 as well for their relevance leading to 7 and high rating in another part of the assessment – they are easy to use leading to 8. Social media platforms are rated lower than others, and it can be rather logical – their relevance is rather low leading to only 3, as well as most of the other criteria, leading to 6 and no part of the assessment giving high rates as to them. Thus, the highest scores are for EHRs, CDSS, and Medical Databases. The relevance of the first two is 8, the same is for the mobile apps while these two with the latter have similar rates for their accuracy. The highest rate as to CDSS, Medical Databases, and Mobile Apps is for their relevance and the lowest is for their application in the researched area, healthcare.

Table 2.2

Information Tool	Ease of Use	Relevance	Accuracy	Integration	Impact on Efficiency
EHRs	8	9	9	7	8
CDSS	7	9	10	8	8
Medical Databases	7	8	9	6	7
Mobile Apps	9	7	7	6	7
Telemedicine	7	8	8	7	8
Patient Portals	8	7	8	7	7
Social Media	6	6	6	5	5

All the results of the assessment can lead to certain conclusions from the part of a student and a professional in such a field as healthcare – the data clearly demonstrate the high rate of all the tools to the same extent, and it can be explained by rather high adaptability of all of them in this particular area. It can be believed that EHRs, CDSS, and Medical Databases are the most accurate tools, and mobile apps and telemedicine platforms are the easiest to use. It must be underlined, however, the conclusion that no existing and discovered combination of them is easy to use or relevant.

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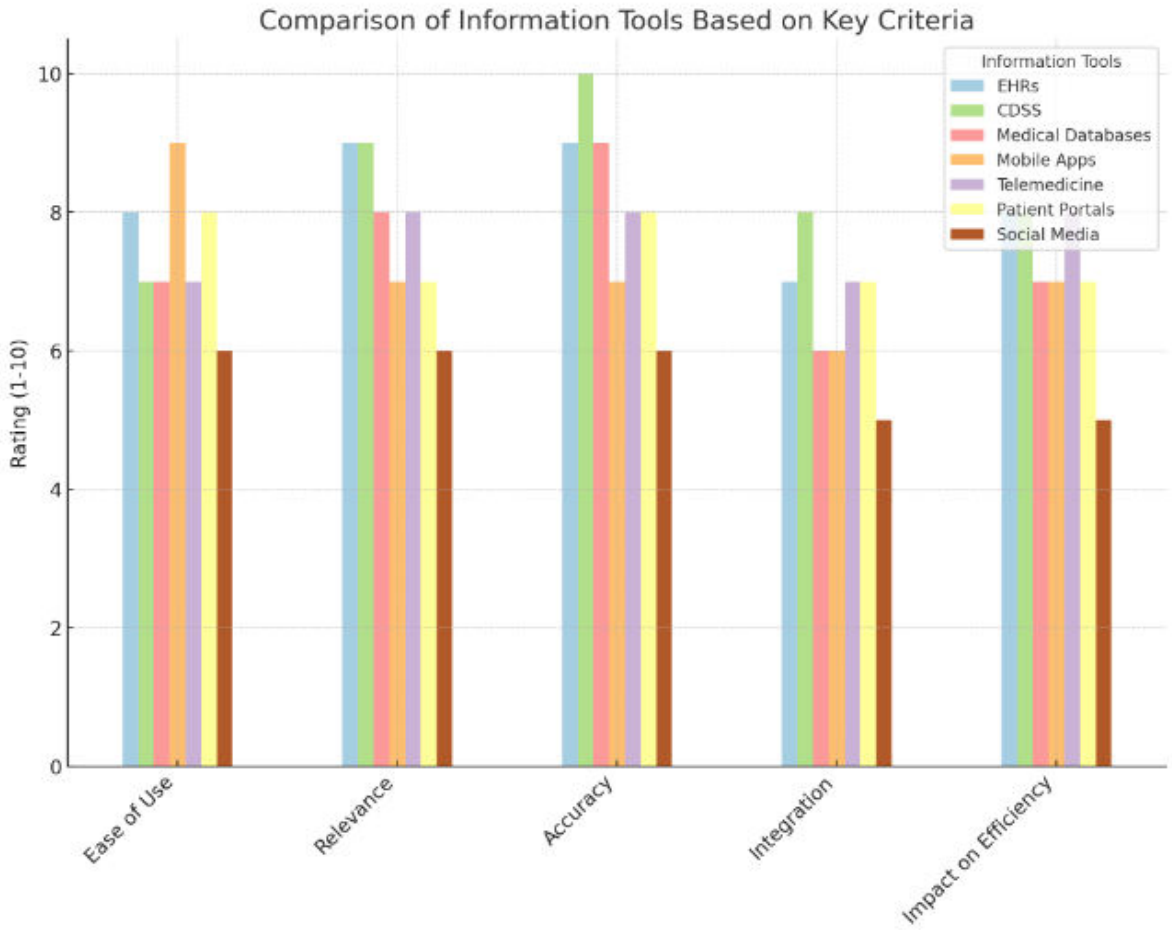

IV. CONCLUSION AND SUGGESTIONS

The assessment illuminates the varied roles of information tools in medical practice, with EHRs, CDSS, and Medical Databases emerging as the systems with the best results in terms of both accuracy and relevance. Mobile apps and Telemedicine platforms are highlighted for the ease of use and accessibility of the former and the high relevance of telemedicine tools. However, integration remains an issue, showing that healthcare IT can benefit from further innovation. In general, the primary conclusion is that these tools should allow medical professionals to increase the quality of patient care or its efficiency and support clinical decisions. In this light, they are generally useful; however, they should be more effectively integrated into daily practice to truly work optimally and derive the full benefits that they can provide.

In conclusion, to allow information tools to work optimally, they should be further integrated. The development of robust interfaces and joining standards should allow a more concerted workflow. Moreover, it is apparent that since CDSS is a relatively complex system and integration requires substantial additional training, providing it to the healthcare workers participating in the program should increase usability. At the same time, integration can be improved by focusing on the quality of mobile apps and certifying them, which can ensure accuracy. As such, telemedicine platforms can also be further developed and deployed, especially in the geographically underserved areas, where access to care is inferior. Finally, the benefits of CDSS will be easier to achieve and expand when the healthcare workers' training program also emphasizes their ability to use social media for professional development, increasing their ability to share professional expertise with one another.

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