

ABSTRACT

Objectives

To assess the optimization of Electronic Health Records (EHRs) for Resource-Constrained Environment in Rwanda.

Methods

Stratified random sampling for geographic representation and representation across healthcare levels. Purposive sampling that targets specific healthcare facilities or regions known for particular challenges or successes in EHR implementation and lastly. Quantitative data are observations measured on a numerical scale. The results collected also were entered into the statistical analysis through Statistical Package for Social Sciences (SPSS) version 20.

Result

The findings show that 9.3% of the respondents said that lack of skilled IT is perceived as the main challenges or barriers to implementing and using EHRs effectively in the hospital, 37.9% of the respondents said that limited internet connectivity is perceived as the main challenges or barriers to implementing and using EHRs effectively in the hospital while 38.3% of the respondents said that resistance from healthcare staff is perceived as the main challenges or barriers to implementing and using EHRs effectively in the hospital.

Conclusion

Infrastructure development, ensure the availability of reliable and high-speed internet connectivity, as well as robust hardware and software infrastructure to support EHR systems. Training and capacity building provide comprehensive training for healthcare staff on the use of EHR systems, data management, and data analysis to ensure effective adoption and utilization.

Introduction

Huge resources in various forms have been deployed worldwide to overhaul the system and maximize efficiency. The promise and intended benefits of electronic health records (EHR) were many at the outset, for instance, elevating the levels of care, enhancing patient safety, streamlining chaotic processes and cutting costs.

In Rwanda, these constraints may include limited funding, insufficient access to advanced technology, inadequate infrastructure, and a shortage of trained personnel within the healthcare system. The Government plans to overhaul the HMIS with the collaboration of Open MRS. Its vision is to gather national data regularly for improved surveillance of all health indicators. Health services rely on simple technology and build on what already exists. Full implementation requires training and interoperability, but the first results are encouraging.

Study Objectives

- To assess the current state of EHR implementation in selected healthcare facilities in resource-constrained environments in Rwanda;
- To identify reported benefits of optimized EHR on Healthcare Delivery;
- To identify the key challenges and barriers hindering effective EHR utilization in these environments.

Methodology

Study Setting: Two stage random selection was made in this study. One random selection was to select any district in Rwanda, second random selection was two hospitals that were selected within Bugesera District.

Study Design: descriptive research type using cross-sectional survey method

Study population: Ranging between 200-300 Participants

Sample Size: 269 Participants

Sampling Strategy: Stratified random sampling from respondent's representation across healthcare levels and Purposive sampling that targets specific healthcare facilities or regions known for particular challenges or successes in EHR implementation.

Conceptual framework

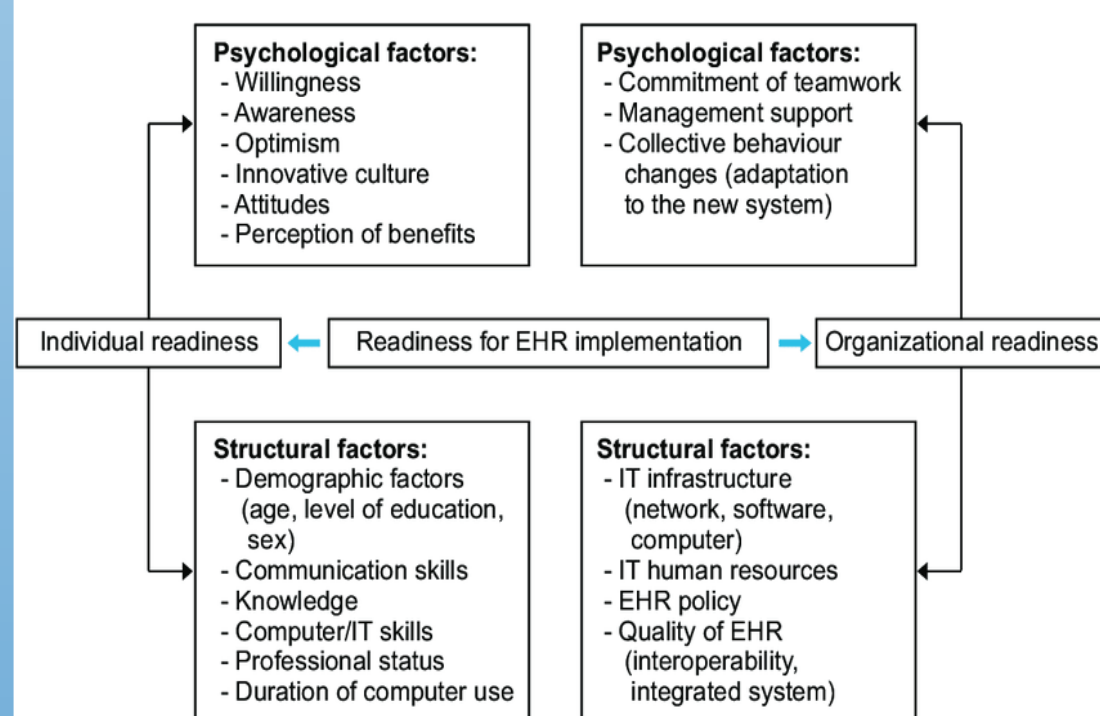


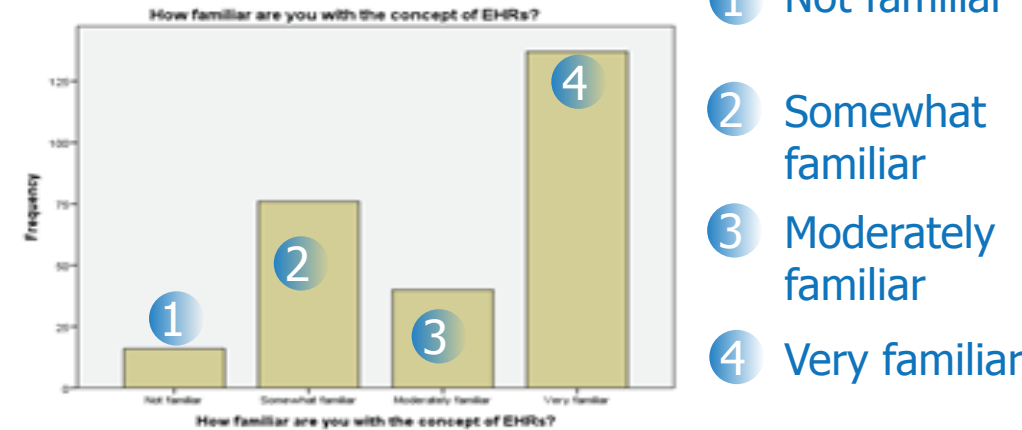
Figure 1: Conceptual framework of the study

Research Gap

The current EHR systems in Rwanda are often plagued by issues such as: Many healthcare facilities in rural areas have limited or no internet connectivity, making it difficult to access and update patient records remotely. Healthcare workers may not have received adequate training on the use of EHR systems, leading to poor adoption and utilization rates. Incomplete or inaccurate patient data lead to poor decision-making and compromised patient care. Limited hardware and infrastructure, the availability and maintenance of EHR devices, servers, and backup systems can be a challenge in resource-constrained settings. Security and privacy concerns, the risk of data breaches and unauthorized access to patient records is high in resource-constrained environments.

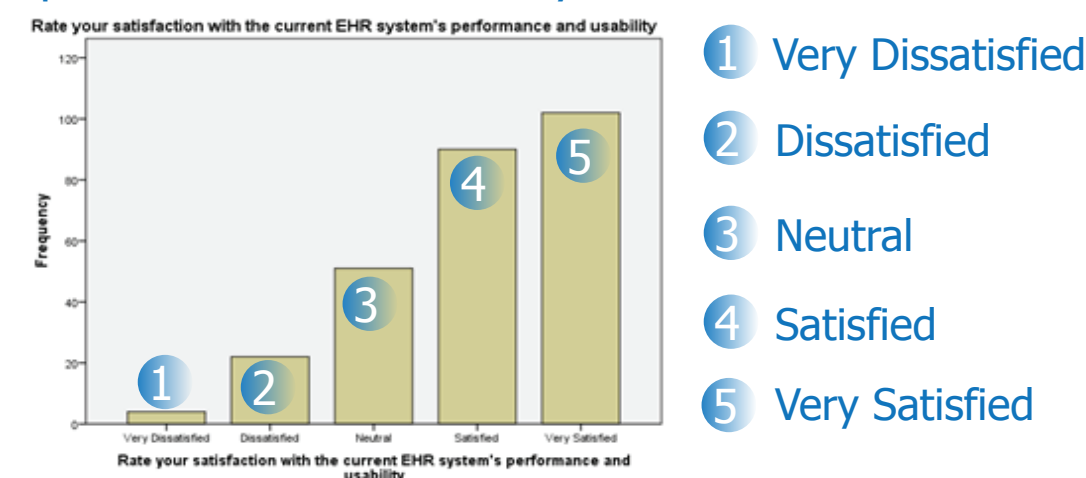
Results

Participants who are familiar with the concepts of EHRs



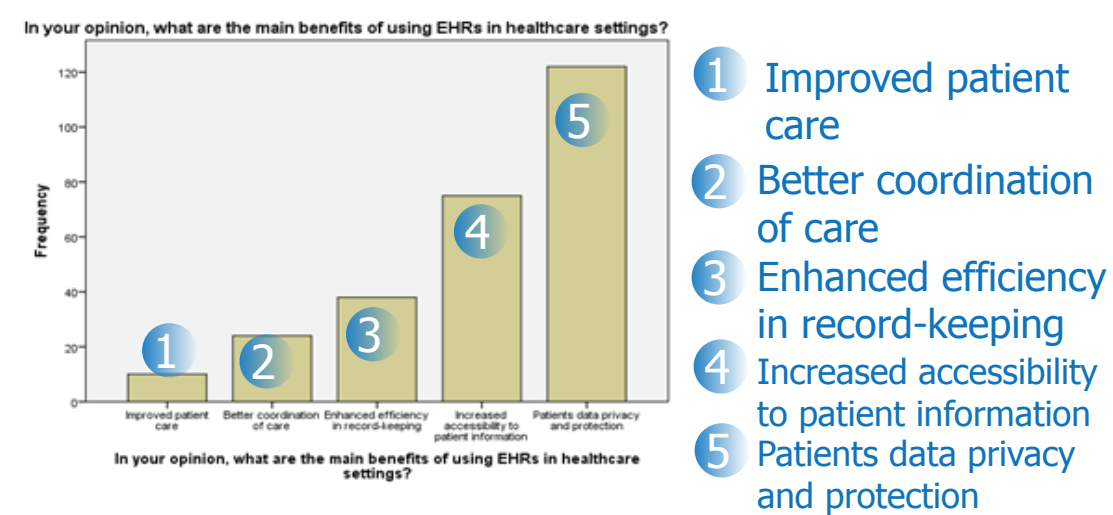
- Not familiar
- Somewhat familiar
- Moderately familiar
- Very familiar

Rate the satisfaction with the current EHR system's performance and usability



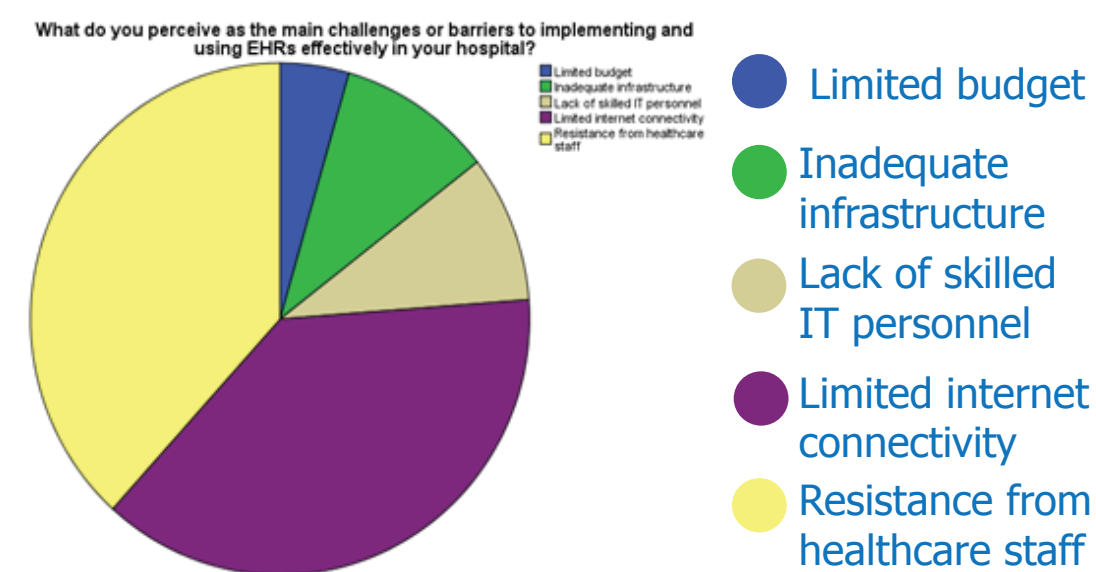
- Very Dissatisfied
- Dissatisfied
- Neutral
- Satisfied
- Very Satisfied

Main benefits of using EHRs in healthcare settings

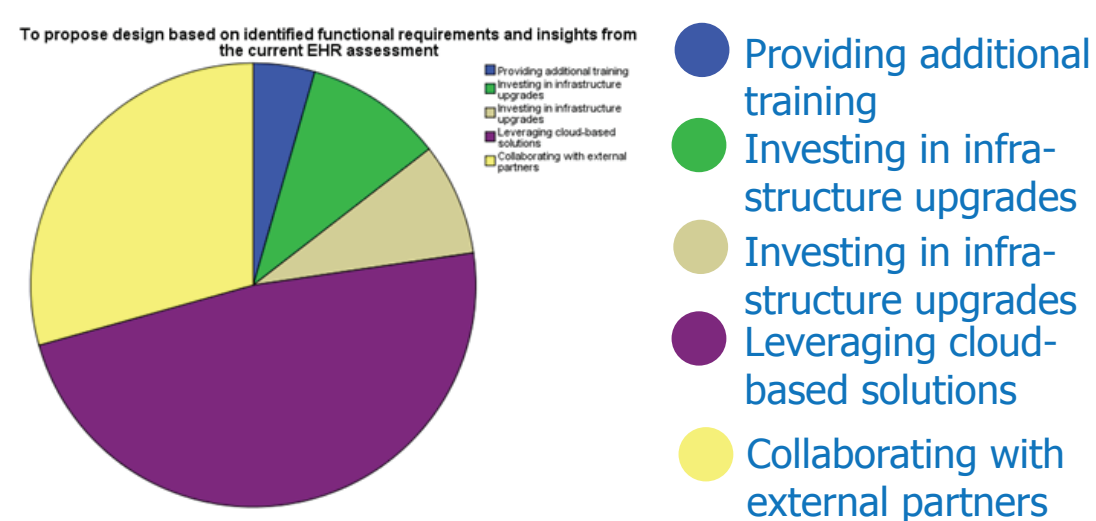


- Improved patient care
- Better coordination of care
- Enhanced efficiency in record-keeping
- Increased accessibility to patient information
- Patients data privacy and protection

Main challenges faced when using the current EHR system



Design based on identified functional requirements and insights from the current EHR assessment



Conclusion

EHRs can improve patient care by providing accurate and up-to-date information, reducing medication errors, and enhancing patient engagement. EHRs can reduce healthcare costs by streamlining clinical workflows, reducing paperwork, and minimizing unnecessary tests and treatments. EHRs can improve patient safety by reducing errors related to medication administration, allergy detection, and lab test results. EHRs can enhance healthcare provider productivity by automating tasks, providing real-time data analytics, and streamlining clinical decision-making.

Recommendations

Infrastructure development, ensure the availability of reliable and high-speed internet connectivity, as well as robust hardware and software infrastructure to support EHR systems.

Training and capacity building provide comprehensive training for healthcare staff on the use of EHR systems, data management, and data analysis to ensure effective adoption and utilization.

Mobile health (mHealth) integration, leverage mHealth technologies to extend the reach of EHRs to rural and hard-to-reach areas, improving access to healthcare services.

Rwanda should optimize its EHR systems, improve patient care, reduce healthcare costs, and enhance healthcare provider productivity in a resource-constrained environment.

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Further Information

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