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ARTIFICIAL INTELLIGENCE IN CLINICAL PRACTICE: BIBLIOGRAPHIC REVIEW OF GLOBAL EXPERIENCES AND PERSPECTIVES FOR ANGOLA (MALANJE)

INTELIGÊNCIA ARTIFICIAL NA PRÁTICA CLÍNICA: UMA REVISÃO BIBLIOGRÁFICA DE EXPERIÊNCIAS E PERSPECTIVAS GLOBAIS PARA ANGOLA (MALANJE)

INTELIGENCIA ARTIFICIAL EN LA PRÁCTICA CLÍNICA: UNA REVISIÓN BIBLIOGRÁFICA DE EXPERIENCIAS Y PERSPECTIVAS GLOBALES PARA ANGOLA (MALANJE)

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ABSTRACT

Artificial intelligence (AI) has emerged as a disruptive technology in healthcare, with applications ranging from imaging diagnostics to clinical data management. This articlepresents a systematic literature review on the use of AI in clinical practice, focusing on global experiences and perspectives for Angola, particularly the Malanje region. The methodology included the analysis of scientific articles published between 2023 and 2025, obtained from platforms such as ScienceDirect, PubMed, SciELO, and Google Scholar, as well as technical reports from international organizations. The overall objective was to synthesize the available evidence on AI applications in healthcare, identifying lessons learned in countries such as the United States, Brazil, and South Africa, and proposing recommendations for its implementation in low-income settings. The results highlight that AI can improve diagnostic accuracy, optimize resource management, and expand access to healthcare services, especially in regions with shortages of professionals and infrastruct. However, its implementation requires investments in technological infrastructure, professional training, and ethical considerations, such as the protection of patient data. The conclusion is that AI can revolutionize clinical practice in Angola, provided it is implemented strategically, with investments in infrastructure, professional training, and ethical considerations. This study contributes to the advancement of scientific knowledge and the

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formulation of evidence-based public policies, aiming to promote equity and efficiency in the Angolan healthcare system.

Keywords: Artificial Intelligence in Healthcare. Clinical Applications of AI. Challenges and Opportunities of AI in Healthcare.

RESUMO

A inteligência artificial (IA) surgiu como uma tecnologia disruptiva na área da saúde, com aplicações que vão desde o diagnóstico por imagem até o gerenciamento de dados clínicos. Este artigo apresenta uma revisão sistemática da literatura sobre o uso da IA na prática clínica, com foco nas experiências globais e nas perspectivas para Angola, particularmente na região de Malanje. A metodologia incluiu a análise de artigos científicos publicados entre 2023 e 2025, obtidos em plataformas como ScienceDirect, PubMed, SciELO e Google Scholar, bem como relatórios técnicos de organizações internacionais. O objetivo geral foi sintetizar as evidências disponíveis sobre as aplicações da IA na área da saúde, identificando lições aprendidas em países como Estados Unidos, Brasil e África do Sul, e propondorecomendações para sua implementação em contextos de baixa renda. Os resultados destacam que a IA pode melhorar a precisão do diagnóstico, otimizar a gestão de recursos e ampliar o acesso aos serviços de saúde, especialmente em regiões com escassez de profissionais e infraestrutura. No entanto, sua implementação requer investimentos em infraestrutura tecnológica, treinamento profissional e considerações éticas, como a proteção dos dados dos pacientes. A conclusão é que a IA pode revolucionar a prática clínica em Angola, desde que seja implementada estrategicamente, com investimentos em infraestrutura, treinamento profissional e considerações éticas. Este estudo contribui para o avanço do conhecimento científico e a formulação de políticas públicas baseadas em evidências, com o objetivo de promover a equidade e a eficiência no sistema de saúde angolano.

Palavras-chave: Inteligência Artificial na Área da Saúde. Aplicações Clínicas da IA. Desafios e Oportunidades da IA na Área da Saúde.

RESUMEN

La inteligencia artificial (IA) se ha convertido en una tecnología disruptiva en el ámbito de la salud, con aplicaciones que van desde el diagnóstico por imágenes hasta la gestión de datos clínicos. Este artículo presenta una revisión sistemática de la literatura sobre el uso de la IA en la práctica clínica, centrándose en las experiencias globales y las perspectivas para Angola, en particular la región de Malanje. La metodología incluyó el análisis de artículos científicos publicados entre 2023 y 2025, obtenidos de plataformas como ScienceDirect, PubMed, SciELO y Google Scholar, así como informes técnicos de organizaciones internacionales. El objetivo general era sintetizar la evidencia disponible sobre las aplicaciones de la IA en la atención sanitaria, identificando las lecciones aprendidas en países como Estados Unidos, Brasil y Sudáfrica, y proponiendo recomendaciones para su implementación en entornos de bajos ingresos. Los resultados ponen de relieve que la IA puede mejorar la precisión del diagnóstico, optimizar la gestión de los recursos y ampliar el acceso a los servicios de salud, especialmente en regiones con escasez de profesionales e infraestructura. Sin embargo, su implementación requiere inversiones en infraestructura tecnológica, formación profesional y consideraciones éticas, como la protección de los datos de los pacientes. La conclusión es que la IA puede revolucionar la práctica clínica en Angola, siempre que se implemente de forma estratégica, con inversiones en

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infraestructura,formación profesional y consideraciones éticas. Este estudio contribuye al avance del conocimiento científico y a la formulación de políticas públicas basadas en la evidencia, con el objetivo de promover la equidad y la eficiencia en el sistema sanitario angolano.

Palabras clave: Inteligencia Artificial en la Asistencia Sanitaria. Aplicaciones Clínicas de la IA. Retos y Oportunidades de la IA en la Asistencia Sanitaria.

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1 INTRODUCTION

1.1 OBJECTIVES

1.1.1 General Objective

Conduct a systematic literature review on the use of artificial intelligence in clinical practice, focusing on global experiences and perspectives for Angola, particularly the Malanje region.

1.1.2 Specific Objectives

Identify the main applications of AI in healthcare, with an emphasis on diagnosis, treatment and clinical data management;

Analyze the experiences of countries such as the United States, Brazil, and South Africa in implementing AI in healthcare;

Propose recommendations for the adoption of AI in Malanje, considering local challenges and opportunities.

2 METHODOLOGY

This study adopted a systematic literature review approach to analyze the use of artificial intelligence (AI) in clinical practice, focusing on global experiences and perspectives for Angola. The methodology was structured in clear and replicable steps, ensuring scientific rigor and transparency in the data selection and analysis process.

Type of study

The study is characterized as a systematic literature review, which consists of a critical and comprehensive analysis of the scientific literature published on a specific topic. This method allows us to synthesize existing evidence, identify gaps in knowledge, and propose future directions for research and practice.

Data Sources

Platforms such as ScienceDirect, PubMed, SciELO, and Google Scholar were consulted, as well as technical reports from international organizations such as the WHO. The search included scientific articles published between 2023 and 2025.

Inclusion and Exclusion Criteria

Studies published between 2023 and 2025, focusing on clinical applications of AI, were included, and articles that did not directly address the topic or were published before 2023 were excluded.

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Search Strategy

The search was carried out using combinations of keywords related to the topic, such as: Artificial intelligence in health, Clinical applications of AI and Challenges and opportunities of AI in health.

Selection and Evaluation of Studies

After the initial search, the articles were selected in two stages: screening by title and abstract, followed by full reading. The methodological quality of the studies was assessed based on criteria such as clarity of objectives, adequacy of methodology, and relevance of results.

Data Analysis

Data analysis was performed through a narrative synthesis, categorizing the studies into three thematic axes: AI applications, global experiences, and challenges and opportunities.

Limitations of the Method

Some limitations should be considered, such as the exclusion of studies published before 2023 and the possible subjectivity in the narrative synthesis.

Literature review AI Applications in Healthcare AI has been widely used in various areas of healthcare, particularly in imaging diagnosis, disease prediction, and clinical data management.

Diagnostic Imaging

Studies show that AI can significantly improve diagnostic accuracy in radiology. Oliveira (2025) highlights the use of machine learning algorithms for the early detection of breast and lung cancer, with accuracy rates exceeding 90% in some cases.

Disease Prediction

AI has also been used to predict disease outbreaks and identify at-risk patients. According to the WHO (2023), AI algorithms can analyze large volumes of epidemiological data and predict the spread of infectious diseases such as malaria and COVID-19.

Data Management

Clinical data management is another area where AI has shown promise. Silva and Souza (2024) highlight that AI tools can organize and analyze large volumes of patient data, facilitating clinical decision-making and resource management in healthcare systems.

Global Experiences with AI in Healthcare

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The implementation of AI in healthcare has been successful in several countries, offering valuable lessons for low-income contexts such as Angola.

United States

In the United States, AI has been widely adopted in hospitals and clinics, focusing on predicting chronic diseases and personalizing treatments (AMERICAN MEDICAL ASSOCIATION, 2023).

Brazil

In Brazil, AI has been integrated into the Unified Health System (SUS) to optimize resource management and improve access to health services (SILV A; SOUZA, 2024).

South Africa

In South Africa, AI pilot projects in telemedicine have been promising, especially in rural areas (SOUTH AFRICAN HEALTH REVIEW, 2024).

Challenges and Opportunities

Implementing AI in healthcare presents both challenges and opportunities, especially in low- income countries.

Challenges

Lack of technological infrastructure. Insufficient professional training.

Ethical issues, such as the protection of patient data.

Opportunities

Reduction of operating costs.

Improving the efficiency of health services. International partnerships for technology transfer.

3 DISCUSSION

The literature review highlighted that AI has the potential to revolutionize clinical practice in Angola, offering innovative solutions to long-standing challenges in the healthcare system.

However, its implementation in Malanje requires strategic planning, with investments in infrastructure, professional training, and international partnerships. Experiences in other countries, such as Brazil and South Africa, show that AI can be adapted to low-income contexts, as long as local specificities and the needs of the population are taken into account.

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4 CONCLUSION

This study demonstrates that AI has the potential to transform clinical practice, offering innovative solutions for diagnosis, treatment, and health management. However, its implementation in low-income settings, such as Malanje, Angola, requires investment in infrastructure, professional training, and ethical considerations. We recommend adopting strategies based on global experiences, focusing on sustainability and equity in access to healthcare. Furthermore, we suggest conducting pilot studies in Malanje to assess the feasibility and impact of AI on the local healthcare system.

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