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The use of Artificial Intelligence in healthcare to promote sustainable development goals: a bibliometric review and a future research and policy agenda

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INTRODUCTION

- Achieving the UN's SDG #3 (Good Health and Well-being) requires innovative healthcare solutions, especially considering challenges highlighted by the COVID-19 pandemic.
- The current literature agrees that technologies such as Artificial intelligence (AI), the Internet of Things, Virtual Reality, and Big Data Analytics offer promising opportunities to improve healthcare delivery and support achieving SDGs' objectives

RESEARCH QUESTIONS

RQ1: How does Artificial Intelligence in healthcare contribute to Sustainable Development Goals achievement?

RQ2: What are the key challenges in integrating AI for a resilient healthcare system?

METHOD

Research Design

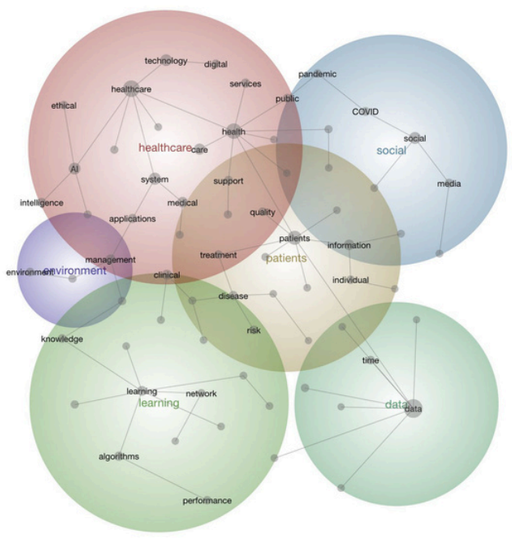
This study fills a research gap by performing a bibliometric analysis on 1,020 Scopus articles within business management and medicine. It investigates the implications of AI-based healthcare applications and their impact on the SDGs, using Leximancer software to identify key themes. The initial search yielded 5,300 articles, which were narrowed down through systematic filtering.

RESULTS, DISCUSSION, LIMITATIONS & FUTURE RESEARCH AVENUES

Results

Five primary clusters of AI applicability in healthcare were identified

- **AI for Healthcare Systems and Decision-Making:** Emphasizes human-AI collaboration to improve healthcare processes.
- **AI for Women's Health:** Focuses on identifying gender-specific risks and creating tailored interventions.
- **AI for Diagnostic Innovations:** Explores using machine learning and deep learning to enhance medical diagnoses.
- **AI for Social Determinants of Health:** Illustrates how AI can reduce health disparities by analyzing socioeconomic factors.
- **AI in the COVID-19 Pandemic:** Highlights AI's role in outbreak prediction, resource optimization, and vaccine development.



Discussion

- AI integration in healthcare aligns with SDG #3 by reducing health inequalities and enhancing universal health coverage.
- It also supports SDG #5 (Gender Equality) by addressing gender-specific health requirements.
- Furthermore, it promotes equitable access to healthcare, contributing to SDG #10 (Reduced Inequalities).

Limitations & Future Research Avenues

The thematic analysis lacks sentiment and nuanced contextual understanding of AI applications in healthcare. The study provides limited investigation into AI's role in addressing healthcare access disparities, particularly in developing regions with limited digital infrastructure.

Future research could benefit from incorporating case studies, expert interviews, and Natural Language Processing (NLP) techniques for a more comprehensive understanding.

CONCLUSION

- The study highlights AI's significant contribution to several Sustainable Development Goals, specifically SDG 3 (Good Health and Well-being), SDG 8 (Decent Work and Economic Growth), SDG 13 (Climate Action), and SDG 10 (Reduced Inequalities) through improved diagnostics, accessibility, efficiency, sustainability, and equitable access.
- Despite its benefits, AI in healthcare raises concerns regarding data privacy, algorithmic bias, and ethical implications, necessitating robust governance and ethical frameworks, transparency, and accountability to build trust and address disparities in AI adoption globally.