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Assignment Report: Literature Review AI in Healthcare

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Summary research paper's:

Paper 1: AI in healthcare: A narrative review

This paper shows the AI role in healthcare and how it has become a need, and how it will help to improve the services and help doctors make better decisions. The paper also mentions how AI can save time and reduce cost.

Paper 2: Applications of Artificial Intelligence (AI) in healthcare: A review

This paper shows the AI role in transforming the healthcare systems through analyzing large datasets and speeding up drug development. AI reduce time and cost and increases accuracy.

Paper 3: AI in Healthcare domain.

This Study explores how AI enhances diagnostics, treatment planning, and clinical decision-making using machine learning and data analytics. It shows that AI improves efficiency and supports personalized healthcare.

Paper 4: Artificial Intelligence in Healthcare and Research.

This paper focuses on various AI applications for disease detection and treatment such as diagnostic algorithms and systems surveillance; it also highlights the key contribution of AI to medical imaging products. It will also examine ethical issues such as data privacy, bias and accountability. The results demonstrate that AI can enhance healthcare delivery but also presents significant ethical and social challenges.

Paper 5: AI in Healthcare: Revolutionizing Diagnosis and Therapy.

This paper focuses on how AI can detect diseases earlier and more accurately, also improve diagnoses and help to find the best treatment for patients; however, it's not reliable because it depends on the quality of the data.

Paper 6: The "inconvenient truth" about AI in healthcare

This paper shows the challenges in AI systems in the healthcare domain and how it needs a strong dataset, and also shows that AI solutions are not ready yet to be used in real hospitals.

Critical Analysis:

After reviewing these papers, it is clear that AI has a big impact on healthcare. Most research finds that AI helps improve efficiency, accuracy, and saves time and helps workers in the healthcare domain to make better decisions.

One of the AI's advantages is the ability to process a large amount of data rapidly, which is difficult for humans; it also helps with early diagnosis and finding the best treatment.

However, there are disadvantages as well; many studies are based on theory or simulations instead of real-world use. Also, concerns exist about bias, data privacy, and trust in AI systems. In addition, AI depends heavily on good-quality data, which is not always available.

Connections:

- 1- All papers discuss AI in healthcare as a main topic.
- 2- All papers show that the data and its quality are very important.
- 3- Many papers agree that AI saves time and reduces cost.
- 4- Some of the papers discuss diagnoses and treatment.
- 5- Some papers mention ethical issues.

Conflict between the findings:

- 1- Some papers focus on the effectiveness and some on the limitations.
- 2- Some studies are theoretical, and some are practical.
- 3- Some papers think that AI can replace humans, others think it's only to support them.
- 4- Different methods are used, some use machine learning and others general AI approaches.

Synthesis Matrix for literature review:

Study	Authors	year	Research design	Key Finding/ result	Methodology	Limitation
AI in healthcare: A narrative review	Shaheen	2021	Review	AI is speeding up drug discovery, improving patient care, reducing time and cost, supporting decision-making and enhancing accuracy and efficiency.	The data was collected from previous research and AI applications. Compared all the findings.	It only explains ideas, no experiment in a real hospital.
Applications of Artificial Intelligence (AI) in healthcare: A review	Väänänen et al.	2021	Review	AI support the health care workers, enhances the medical outcomes and shows promising potential.	Data was collected from previous research and reports. Comparing AI applications with traditional systems.	General review about AI in healthcare, no detailed experiment.
AI in Healthcare domain.	Talati	2023	Review	AI support the health care efficiency, enhances decision-making, and improves diagnosis accuracy.	Using healthcare data and existing studies. Discussing AI technologies and applications in diagnoses and treatment.	Not detailed enough technically, no experiment and no solution for the ethical issues.
Artificial Intelligence in Healthcare and Research.	Nuffield	2018	Review	AI support patient care and healthcare management .	Case studies and reports. Analyzed real-world applications like medical imaging and apps.	More focused on ethics than technical details. Limited performance evaluation.

				AI improve medical imaging and disease detection. But raises ethical concerns.	Discussed risks and benefits.	
AI in Healthcare: Revolutionizing Diagnosis and Therapy	Zeb et al.	2024	Review	AI improve the early detection, diagnostic accuracy and medical imaging.	Using healthcare data and previous studies. discussed AI techniques in diagnosis and treatment. Evaluated improvements in accuracy.	Depends on data quality. Limited real-world implementation discussion. Lack of transparency in AI models.
The “inconvenient truth” about AI in healthcare	Panch et al.	2019	Perspective	The AI limitation is the lack of high-quality data, and many say systems are not ready for real-life use.	Conceptual analysis based on the existing system. Explored the challenges in applying AI in healthcare systems.	Limited example – no real-world implementation.

References:

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- 2- Panch, T., Mattie, H., & Celi, L. A. (2019). *The “inconvenient truth” about AI in healthcare*.
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- 3- Shaheen, M. Y. (2021) *Applications of Artificial Intelligence (AI) in healthcare: A review*
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- 5- Väänänen, A., Haataja K., Katri Vehviläinen-Julkunen, K., Toivanen, P. (2021) *AI in healthcare: A narrative review* [AI in healthcare: A narrative review / F1000Research](#)
- 6- Zeb, S. FNU, N. Abbasi, N. Fahad, M. (2024) *AI in Healthcare: Revolutionizing Diagnosis and Therapy*. [hengki26,+\[12\].+4546-Article+Text-20173-1-2-20240815.pdf](#)