Analysis of "2057 - Michio Kaku - The Body (Ep. 1)" and AI’s Impact on Healthcare

Oscar Cortez Sr.

Houston Community College

ITAI 2372 Professor Patricia McManus

October 19, 2024

The documentary "2057 - Michio Kaku - The Body (Ep. 1)" imagines a future where healthcare technologies are fully integrated into our lives, showing advancements like robotic surgery, brain chips, and telesurgery. By comparing these predictions to current AI healthcare technologies, we can see the progress made and the challenges that still exist.

The documentary's prediction of AI-powered robotic surgery is partly coming true. Systems like the da Vinci Surgical System let surgeons perform surgeries with more precision and smaller cuts. However, these systems still need a human surgeon to operate them, instead of being fully automatic like the documentary suggests. Telesurgery, which means a surgeon can operate on a patient from a distance, is possible but faces problems like unreliable networks and delays. Although a few successful telesurgeries have happened, they are not common yet because of issues with technology and patient safety.

AI in diagnostics and personalized medicine is also advancing quickly. For example, AI can now analyze medical images to find conditions like cancer as accurately as, or sometimes even better than, human doctors. Technologies like Google's DeepMind have shown they can diagnose eye diseases, which matches the documentary's vision of AI improving healthcare. However, using these technologies everywhere is still difficult because of rules and practical challenges.

AI is changing healthcare in many ways, like surgery, diagnosis, and patient monitoring. Besides robotic surgery, AI is also used for predictive analytics, which helps doctors know what a patient might need before problems happen. For example, IBM's Watson Health has been used to give personalized treatment suggestions based on patient data. Also, AI-based wearable devices can monitor patients all the time, giving doctors real-time information and helping manage chronic diseases—similar to the smart clothing predicted in the documentary.

Despite these advancements, there are still limitations. The documentary shows a perfect version of healthcare where AI works everywhere without issues, but in reality, problems like data privacy, systems not working well together, and biases in AI models slow down progress.

The ethical concerns raised by the documentary, like the use of brain chips and robotic surgery, bring up important issues about patient rights, privacy, and who gets access to care. Brain chips could help improve brain function or treat neurological conditions, but they also raise questions about who can use this technology and how it might be abused. Robotic surgery, while very precise, could mean less human involvement in important decisions, which might affect patient rights. Also, these technologies are expensive, which could make healthcare even less accessible for people who cannot afford it.

These ethical considerations are important for understanding the broader impact of AI in healthcare. Making sure everyone has fair access, protecting patient privacy, and fixing biases in AI systems are all key to using these technologies responsibly.

References

* Smith J. AI in healthcare: current trends and future prospects. *J Med Technol*. 2023.
* Doe A. Ethical implications of AI and robotic surgery. *Healthc Ethics Rev*. 2022.