Article Machine Learning

AI in preventative healthcare benefits from the human touch

By Marcus Law

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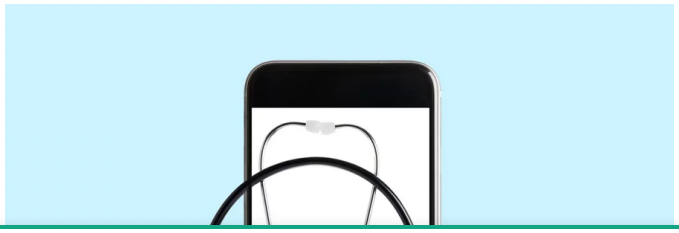

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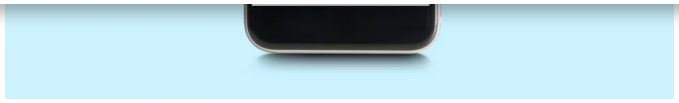

As technology is increasingly used to diagnose and treat patients more effectively, people are more likely to trust AI when it is paired with a human touch

Individuals are more likely to show more trust in artificial intelligence (AI) when it is paired with a human touch, research has found.

Researchers led by Nanyang Technological University (NTU) in Singapore found that individuals show less trust in preventive care interventions suggested by AI than when the same interventions are prompted by human health experts.

The findings suggest that the human element remains important as the healthcare sector increasingly adopts AI to screen, diagnose and treat patients more efficiently.

And with research showing older patients were able to live independently longer thanks to digital healthcare, AI is to continue to play an instrumental role in healthcare.

AI healthcare technology works best when complementing humans rather than replacing them

Preventive care interventions are activities aimed at reducing risks to health, such as undertaking a health screening, increasing physical activity, and receiving a vaccination.

And promoting healthy behaviours to prevent or reduce illness and disability among the ever expanding older population may neutralise the overwhelming demand for healthcare.

Studying 15,000 users of a health mobile application in South Korea, NTU researchers found that emphasising the involvement of a human health expert in an AI-suggested intervention could improve its acceptance and effectiveness.

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Assistant Professor Hyeokkoo Eric Kwon from NTU's Nanyang Business School said: "Despite the potential of artificial intelligence to provide higher quality interventions, we found that people have lower trust in health interventions suggested by or derived from AI alone, as compared to those they perceive to be based on human expert opinion. Our study shows that the affective human element, which is linked to emotions and attitudes, remains important even as health interventions are increasingly guided by AI, and that such technology works best when complementing humans, rather than replacing them."

To study user perceptions of preventive health interventions proposed by artificial intelligence (AI) compared to those proposed by humans, the research team recruited 9,000 users of a mobile health app in South Korea.

Through the app, these users received a pop-up notification that encouraged them to walk a specific number of steps, generated for each user via an AI algorithm. The app then measured the number of steps taken for users who chose to take on this health intervention.

For 3,000 users in the AI-suggested intervention group, their pop-up notification read: "AI recommends that you walk (personalised step goal) in the next seven days. Would you like to participate?" Another 3,000 in the human-suggested intervention received a notification that read: 'Health expert recommends that you walk (personalised step goal) in the next seven days. Would you like to participate?"

A control group of 3,000 users received the neutral intervention that mentioned neither AI nor a health expert.

Of the users who received the AI-suggested intervention, 19% accepted the intervention. About 10% of this group subsequently achieved their personalised step goal at the end of the week. More users in the group that received the human-suggested intervention accepted the intervention (22%) and achieved their goal (13%).

Improving the effectiveness of AI-suggested interventions

The research team then extended their study to include two more groups of 3,000 users of the same mobile app.

One group received an intervention that disclosed the use of AI in conjunction with health experts. The other group received an intervention that explained how AI generated the interventions.

Users were more accepting of the health intervention that showed how AI was used to complement a health expert's opinion (27%) compared to purely AI-suggested or human-suggested interventions. Of this group, 19% achieved their personalised step goal.

Being transparent about how AI was used to generate the personalised step goal also led to a higher acceptance rate (21%). Of this group, 13% achieved their goal.

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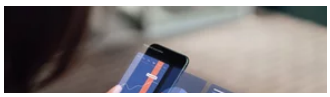

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