Artificial intelligence (AI) has been prominent in headlines, creating much discourse among experts and the public alike. Advocates view recent advances in AI as revolutionary, while opponents warn that this untested technology could have dire costs. As such, active evaluation of its benefits, limitations, and unintended consequences in nutrition education is critical. Put another way, the tide of AI is already crashing down, but are nutrition education professionals ready?

In simple terms, AI is a field in which computer science is combined with large datasets to solve problems. The most relevant and well-known subfield of AI is machine learning, in which algorithms identify and learn patterns in large datasets to predict outcomes, without being explicitly programmed to do so. Machine learning applications relevant to nutrition research include predictive analysis, computer vision, and natural language processing. Predictive analysis allows researchers to predict health outcomes using voluminous datasets of dietary exposure. Computer vision could provide an objective and less burdensome assessment of dietary intake by determining foods and portions through digital applications. Natural language processing makes sense of voluminous text-based data sources, such as social media, food recalls, and medical records. Natural language processing is typically used to develop chatbots.

The benefits of AI-driven creations are easy to imagine and may include effective dietary assessments, tailored dietary advice, and a deep understanding of how diet affects health, furthering the field of precision nutrition. AI can also increase access to high-quality nutrition counseling and education among groups less likely to seek in-person health care because of fewer health-related resources in their community (eg, rural areas), due to experienced discrimination that fuels mistrust or physical limitations that make in-person care challenging. Furthermore, AI’s high reach potential is a significant benefit as 85% of US residents have access to a mobile device, with little variation by socioeconomic status or between racial and ethnic groups.

In contrast, it is imperative to assess the drawbacks and unintended consequences of AI in nutrition education. One drawback is at the core of machine learning: while the output can be precise and based on an astounding amount of data, there is little control over the process once the initial algorithm is inputted. For example, a machine learning algorithm could scour the internet to automatically generate nutrition-related social media posts. Although this efficiently produces content, the data from which the machine learning algorithm may learn could result in inaccurate recommendations, such as a healthy diet including adaptogen supplements, kombucha, and $15 kale smoothies, driven by voluminous social media influencer posts. Another concern regarding the quality of the data is that algorithms may “average” information from the internet, which reflects a predominantly White culture, leaving the cultural norms of many groups unrepresented.

Whether it enthralls or terrifies you, AI is being quickly adopted throughout society. Rather than allowing the AI tide to wash us away, nutrition professionals must learn to leverage this technology to create more effective nutrition education programs, disseminate accurate nutrition information, and assess diets to help more people eat a healthy diet.

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REFERENCES