

Critical Adoption of Disruptive Health Technology

Health technology is advancing at breakneck speeds, powered by new discoveries that have disrupted medical practice as we know it. Research and development are accelerated, not only intrinsically, but also by external events that provided the impetus for change. Last century's push came from space flight and computers, this millennium's is triggered by catastrophes such as the pandemic. Adoption of such technology is swift, and some say too rapid for comfort.

This is seen in areas such as AI and machine learning, robotic surgery and telemedicine, drug discovery and development. It is feared that the speed of integration of such technology in healthcare systems appear to overtake our own ability to comprehend the science or the implications of such.¹

In the meantime, we have to endeavor to analyze the literature that is currently flooding the publications. Such a phenomenon was documented by a bibliometric review by Dalky which discovered that artificial intelligence (AI) and machine learning (ML) articles rose dramatically from 694 in 2000 and reached 86,284 in 2021.² At the *Acta Medica Philippina*, an article on deep learning was published in 2024 on the use of convolutional neural networks in the classification of single photon emission computed tomography-myocardial perfusion imaging (SPECT-MPI) results.³ A similar article appeared in this year's issue utilizing back propagation neural network (BPNN) and a recurrent neural network (RNN) in the analysis of rural health unit accessibility.⁴ In this issue, Acilador and Opina describe the construction of an algorithm to predict blood donor retention via a machine learning approach.⁵ For these three papers, the utility of their findings needs to be analyzed using a specific framework.

We are fortunate that Consolidated Standards of Reporting Trials (CONSORT) came up with a CONSORT–Artificial Intelligence (AI) extension—a new reporting guideline for clinical trials evaluating interventions with an AI component.⁶ While the CONSORT AI was designed to “ensure transparency, minimize potential biases, and promote the trustworthiness of the results,” the subsequent challenge is to determine “the extent to which (the results) may be generalizable.” The first two roles can be performed by a trained peer reviewer, but the latter may require the overview and maturity not only of a journal editor but also of a critical reader as well.

Speaking of the critical reader, the integration of “solutions” provided by AI is still in its nascent phase in health care. While uptake is spreading especially among younger health professionals, illustrated in this issue by a cross-sectional study by Lacanlale and co-authors on the use of ChatGPT among student nurses in Baguio City, Philippines as an example of early potential adoption, there are obvious barriers to its utilization.⁷ Among such are algorithmic opacity, insufficient training, and ethical challenges. These were the issues discovered in a recent paper by Tun.⁸ Artificial intelligence should improve in explainability and reliability to improve trust and increase assimilation in health care systems.⁹

Despite such concerns, we continue to innovate and harness new technology for our day-to-day work. We thus look forward to the day when a case report in this issue by Jacinto and co-authors on the application of a 3D printed patient-specific zygomatic implant for a post-traumatic facial deformity eventually becomes a report on mainstream experience with such technology.¹⁰

Our publication of these papers is proof that local researchers are in stride with the ongoing revolution in health care technology.

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