

For a critical appraisal of artificial intelligence in healthcare: the problem of bias in mHealth.

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Abstract

Artificial intelligence and big data are more and more used in medicine, either in prevention, diagnosis or treatment, and are clearly modifying the way medicine is thought and practiced. Some authors argue that the use of artificial intelligence techniques to analyze big data would even constitute a scientific revolution, in medicine as much as in other scientific disciplines. Moreover, artificial intelligence techniques, coupled with mobile health technologies, could furnish a personalized medicine, adapted to the individuality of each patient. In this paper we argue that this conception is largely a myth: what health professionals and patients need is not more data, but data that are critically appraised, especially to avoid bias. The validity of data and the validity of inferences drawn from the data by algorithms are indeed a major epistemic issue, though rarely addressed as such by health professionals or philosophers of medicine. Considering the history of epidemiology, specifically the formation of the concept of bias, we propose three research priorities concerning the use of artificial intelligence and big data in medicine.

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