Artificial intelligence and the future in health policy, planning and management
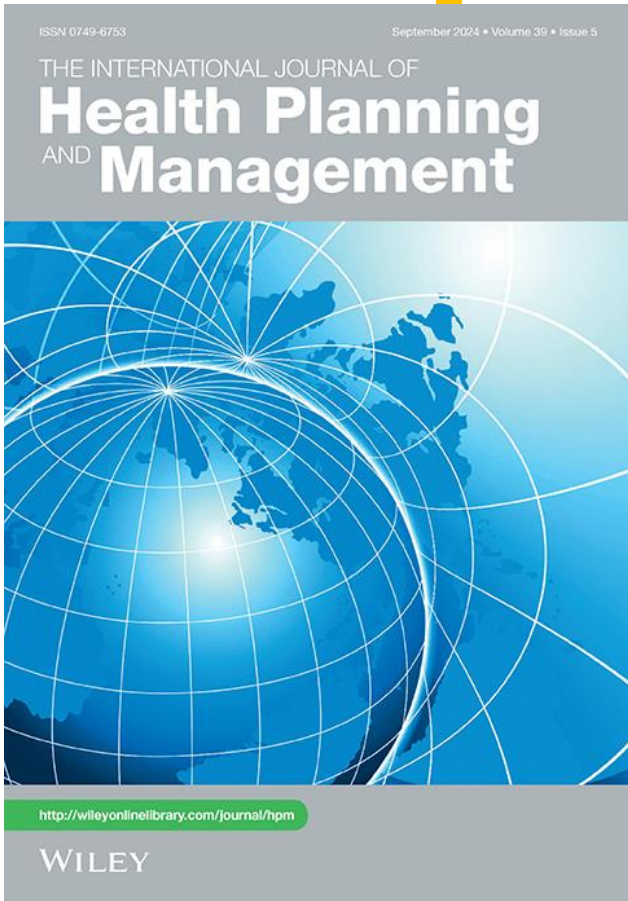
هوش مصنوعی و آینده در سیاست گذاری، برنامه ریزی و مدیریت سلامت

مرکز آموزش عالی علوم پزشکی وارستگان

Journal Club(1403/8/24)

Nastran Soltany (4021)

- Journal Title:
International journal of health planning
and management

- Indexed in: ISI, Scopus, PubMed

- Publisher: Wiley   - IF: 2.1   - Published:2023

- Aims and Scope
The Journal is explicitly international and multidisciplinary in scope and appeal: articles about policy, planning and management in countries at various stages of political, social, cultural and economic development are welcomed, as are those directed at the different levels (national, regional, local) of the health sector. Manuscripts are invited from a spectrum of different disciplines e.g., (the social sciences, management and medicine) as long as they advance our knowledge and understanding of the health sector.

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1- SETTING THE TONE: AI THROUGH A UTILITARIAN LENS

2- THE CLOSER AI GETS, THE MORE POLARIZED THE DISCUSSION IS

3- REDUCING THE POLARIZATION AROUND AI: THE DUTY OF SCIENCE

Topics

4- KEY ASPECTS TO INFORM THE DEBATE ON AI

5- AI IN HEALTH POLICY, PLANNING AND MANAGEMENT

١- AI Through A Utilitarian Lens:

Instead of speculative and catastrophic anticipations of AI, which does no more than push benefits away from health professionals and patients, the debate of its use in healthcare needs to elucidate how changes in policies, plan-
Ning, financing, services, management,
and behaviors can cope with key principles
in public health such as security, quality, ethics, or equity.
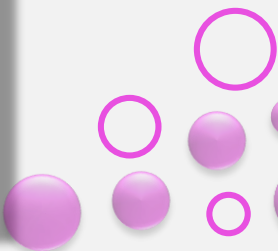
٢- THE CLOSER AI GETS, THE MORE POLARIZED THE DISCUSSION IS

However, as commercial interests in AI increase, the stage of political polarization about permissions and restrict
tigons in various domains of daily collective life will increase. This goes from countries' geopolitical, economic, and
military relations to the production, marketing, distribution, and consumption of goods and services; the planning and
management of public and private companies and infrastructures; labour markets, relations, and working conditions;
and the production, use, and verification of mass information.

 No less important, polarization is expected to reach public opinion and the way people manage their lives and
interactions with others and institutions.

It is this contribution of science that this editorial calls attention to regarding health. It is up to scientists to leverage the debate in the most transparent, critical, and enlightened way so that other institutions, policymakers, and the public understand the meaning of AI, its uses, risks, and potentialities
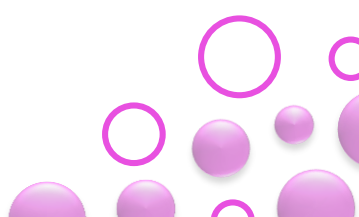
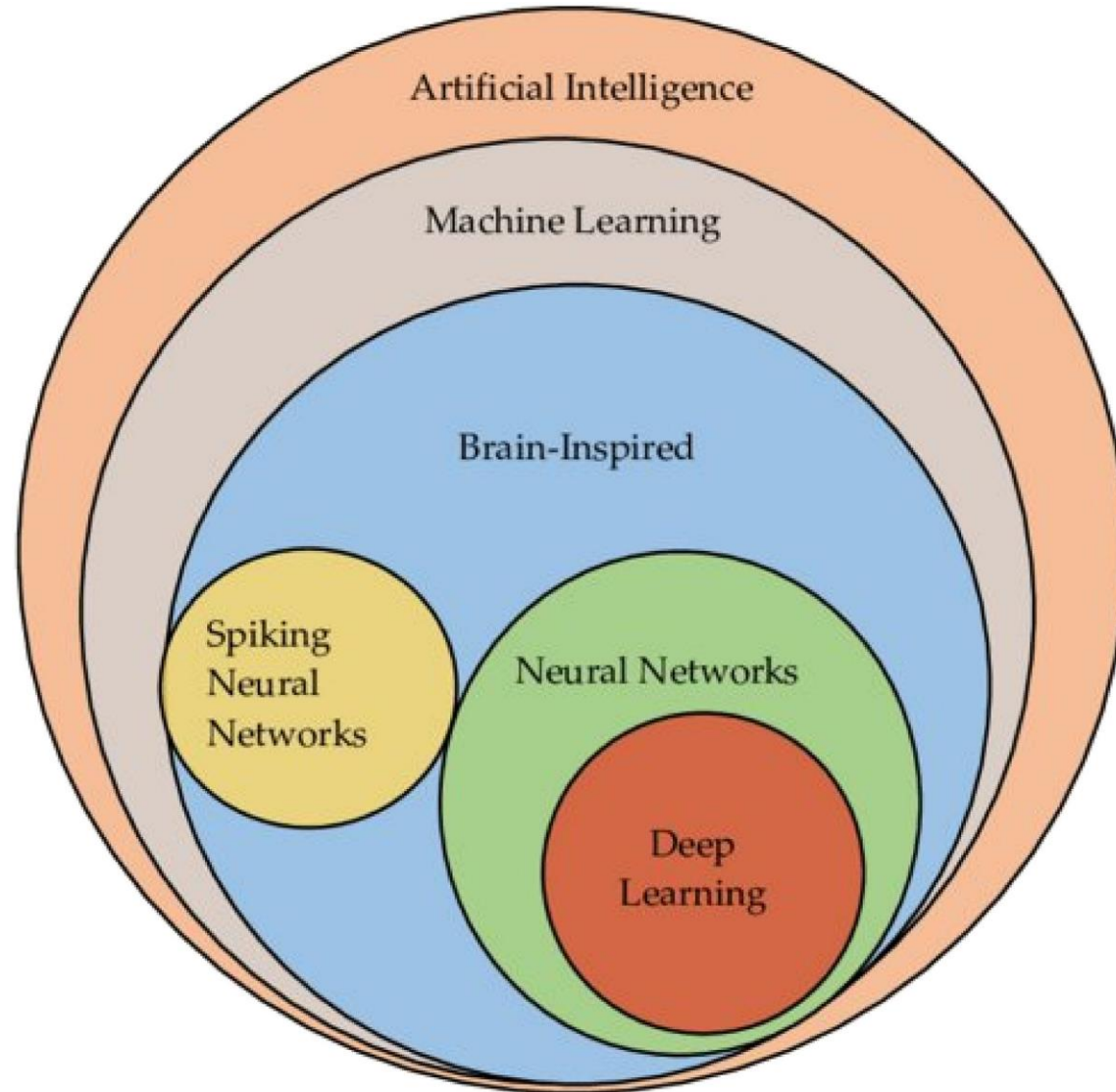# ٢- KEY ASPECTS TO INFORM THE DEBATE ON AI

٢.١ What is AI?

٢.٢ Controversies in the definition of AI

٢.٣ What is not AI?

٢.٤ Taxonomies of learning processes in AI

8

Classification of artificial intelligence

🔻- AI IN HEALTH POLICY, PLANNING AND MANAGEMENT

The integration of AI in healthcare holds great promise for
enhancing patient care and advancing medical research.
Artificial Intelligence is being used for screening
 skin lesions or polyps in the lower intestine for malignity,
to help predict recurrences in cancer,
or to detect artefact images
or suspected lesions in Rx or other clinical
radiology imaging procedures.
 The examples of applicability are immense

Clinical And Research Realm

Diagnostics:
AI driven image recognition can aid in early detection and diagnosis of diseases(cancers, Alzheimer's, ..) by analyzing medical images such MRI, CT scans… More accurately and quickly…

Drug discovery:
AI can accelerate the process of drug discovery and development by predicting the efficacy and safety of potential drug candidates, thereby reducing the time and cost associated with traditional methods.

Clinical And Research Realm

Personalized medicine:
AI can analyze large datasets of genetic information, patients records, and environmental factors to identify individualized treatment plans, enhancing the efficacy of therapies and reducing adverse side effects.

Virtual health assistants:
AI powered chatbots and virtual assistants can provide patients with tailored health information, medication reminders, and symptom tracking, improving patient engagement and adherence to treatment plans.

Clinical And Research Realm

Supporting clinical research:
AI algorithms can help identify unexpected correlations and research clues, as well as find subject for certain studies requiring very specific study subject. AI can also assist as an analytical methodology when very different health or personal data types are at stake.

Trials:
AI can be used for optimizing clinical, and specially drug randomized controlled trials (RCT) but inversely, increasing regulators like the FDS or the korea FDA are requiring RCT as evidence on safety and applicability of certain al solutions decisions by analysing patient data, suggesting Potential diagnoses, recommending evidence-based treatment options.

Applications in policy, planning and management

Services and resource management:
AI-driven algorithms can analyze historical patient data, bed occupancy rates, and staff availability to optimize hospital operations, such as patient admission and discharge, resource allocation, and staffing schedules.

Predictive analytics:
AI can be employed to forecast patient demand, disease outbreaks, or public health emergencies by analyzing large datasets from various sources, such as electronic health records, social media, and climate data.

Applications in policy, planning and management

Health insurance and risk assessment:
AI can help insurance companies assess risk and determine premiums more accurately by analyzing data on demographics, medical history, and lifestyle factors.

Cost-effectiveness analysis:
AI-powered tools can analyze extensive amounts of data to determine the cost-effectiveness of various healthcare interventions, enabling evidence-based decisions on allocating resources and implementing health programs.

Applications in policy, planning and management

Telemedicine and remote monitoring:
AI can enhance telemedicine services by supporting virtual consultations, including in remote or underserved areas.

Supply chain management:
AI can optimize healthcare supply chains by predicting virtual consultations, remote patient monitoring, and early intervention, including in remote or underserved areas.

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THANKS YOU FOR YOUR ATTENTIONS