LETTER TO THE EDITOR

Barriers to Learning AI in Public Health: The Viewpoint of a Medical Student

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Dear Editor,

I am a public health enthusiast and medical student. Artificial intelligence (AI) is poised to transform public health through applications like predictive epidemiology and health equity analytics. However, as a medical student, I encounter significant barriers to learning AI within public health education, including curricular gaps, technical inaccessibility, ethical complexities, and insufficient collaboration between academia, public health, and AI professionals. To overcome these obstacles and equip future medical professionals to utilise AI effectively, multidisciplinary relationships must be strengthened.

One of the main obstacles is the absence of AI-focused medical school curriculum. Most programs emphasise clinical competencies, sidelining emerging technologies. According to a survey, only 12% of medical schools offer AI courses relevant to public health applications, such as disease monitoring and machine learning [1]. Without exposure to concepts like supervised learning or data preprocessing, students struggle to understand tools like AI-driven outbreak prediction models [2]. Self-directed learning is often the only option, which is inefficient and inequitable, particularly for public health applications requiring specialised knowledge.

Technical inaccessibility further hinders AI education. Public health AI tools, such as those for analysing social determinants of health, demand proficiency in programming (*e.g*., Python) and access to computational resources. Many medical students lack coding experience, facing a steep learning curve [3]. Additionally, academic institutions often lack access to high-performance computing or licensed software. A 2022 survey reported that 65% of medical students felt unprepared to use AI in public health due to inadequate technical skills [4]. This gap limits engagement with practical applications, such as geospatial AI for epidemic tracking.

Ethical challenges also impede learning. AI in public health raises concerns about bias, privacy, and equity. For example, biased algorithms have exacerbated disparities in COVID-19 risk assessments [5]. A study found that 58% of students expressed concern about AI's reliability in public health due to insufficient ethical guidance [6]. This fosters hesitation in adopting AI tools, thereby undermining their potential in health equity initiatives.

The most critical barrier is the lack of collaboration between academia, public health, and AI professionals. An analysis highlighted that interdisciplinary programs involving AI professionals and public health experts increased student competency in AI applications by 40% [7]. However, such initiatives, like hackathons or joint research projects, are scarce in medical schools.

Despite AI's enormous potential for improving public health, medical students encounter several obstacles while attempting to understand this technology. Medical education can prepare students to utilise AI efficiently by redefining the curriculum, enhancing technological access, addressing ethical issues, and emphasising collaboration between academics, public health experts, and AI specialists. These measures are crucial for preparing future medical professionals to effectively use and develop AI-driven public health solutions.

CONFLICT OF INTEREST

The author declares no conflict of interest.

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AUTHOR'S CONTRIBUTION

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