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LETTER TO THE EDITOR

An Insight into the Incorporation of Artificial Intelligence in Paediatrics Practice in Iraq

Dear Editor,

Artificial intelligence (AI) is a revolutionary tool to collect and analyse large datasets rapidly and cost-effectively in various fields. It has gained promising applications in various fields such as healthcare, engineering, finance, robotics, e-commerce, marketing, facial recognition, research and others.[1] In the field of medicine and healthcare, it could facilitate the diagnostic process, support the decision-making process of physicians and improve the management of different health disorders.[2]

The quick introduction of greatly flexible, reusable AI models is anticipated to usher in exceptional capabilities in different medical fields. A new paradigm for medical AI, referred to as generalist medical AI (GMAI), has been proposed. It is expected that GMAI models will be able to accomplish a diverse set of tasks utilising few or no task-specific labelled data. They will smoothly interpret various collections of medical modalities, involving data from electronic health files, imaging, laboratory findings, graphs or medical text and genomics. These models will in turn generate expressive outputs such as free-text explanations, spoken recommendations and image annotations which address high-quality medical reasoning capabilities. Setting GMAI-empowered applications could challenge the current strategies for the regulation and validation of AI devices for different medical disciplines and shift medical practices correlated with the collection of huge medical datasets.[3,4]

Paediatrics is a discipline with rich datasets, somewhat more complete longitudinal records and frequently less heterogeneous patterns of disease compared to adult medicine. In clinical settings, paediatricians usually make medical decisions after getting a large amount of information from patients about their symptoms, physical examinations, results of laboratory tests, special diagnostic tests and treatments. This information, in combination with the paediatricians' knowledge and experience, constitute the basis of clinical decisions and planning management lines. Thus, the decision-making process is hard and subject to errors in the form of missed or wrong diagnoses. The application of AI technologies to paediatrics is promising and it is anticipated to help paediatricians manage large quantities of both clinical and laboratory data, hasten diagnostic assessments and offer clinical decisions in situations of diagnostic complexity or uncertainty. Though this positive effect might be most effective in regions with relative paediatricians' shortage, the advantage of AI system is predicted to be global.[5,6]

In Iraq, there are important limitations linked to the AI application to paediatrics practice. First, though there is a positive perception of the AI impact on facilitating the decision-making process of certain health professionals (dentists and ophthalmologists) and the quality of patient care in Iraq, a comparable impact has not yet been demonstrated among paediatricians to justify AI application.[7] Therefore, studies on knowledge, attitudes and how AI could influence the decision-making process of paediatricians as well as how it could affect the quality of care provided to sick children are needed. Second, Iraq has faced devastating effects of various crises over the past few decades resulting in disruption of infrastructure. Importantly, electric power and net services are greatly incapacitated which will definitely affect AI accessibility and application.[8] Third, paediatricians have different levels of interest in digital technology skills, including AI. Their positive attitude and perceived skill ought to be enhanced in order to become competent in applying AI in practice. Regrettably, digital healthcare is not yet embedded in medical education and training programmes in Iraq. Thus, paediatricians are not trained in the use of AI and do not understand how to incorporate it into paediatric healthcare services. Fourth, the implementation of AI is expensive because searching using an AI-language model needs more computing power-specifically chips and electricity than the usual search. Thus, it requires adequate funding which is unlikely to be available in the current economic crisis in the country. Fifth, as AI has no moral status, there is a legal concern that AI might replace the professional responsibility of paediatricians in managing paediatric health disorders. The recruitment of AI in paediatric practice might threaten paediatricians' and patients' dignity and autonomy. When errors or accidents happen with AI, the responsibility attribution will not be obvious. Sixth, the ethical challenge associated with AI applications have created a new requirement for country governance. To guarantee truthful applications of AI in paediatrics, the institution of an ethical governance framework and special guidelines for controlling AI applications needs to be established in Iraq.

In conclusion, although AI has the potential to reshape paediatrics practice and the delivery of healthcare, the time has not yet come to incorporate it in actual practice in Iraq pending the alleviation of numerous limitations associated with AI application.

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