Editorial

Public Use of Artificial Intelligence for Health Information and Its Implications for Healthcare in Pakistan

Kamran Khalid
Dean Centre, Program Director, Health Professions Education (HPE), College of Physicians and Surgeons Pakistan, Lahore, Pakistan
Email: kkkhawaja@hotmail.com

Artificial intelligence (AI) is increasingly becoming used by people to seek, understand and use health information. Its convenience, round-the-clock availability and ability to explain difficult medical terms in simple language make it an attractive and relatively inexpensive source of advice for managing everyday health problems and helping people understand treatment options recommended by healthcare professionals. The AI applications may be particularly useful for discussing sensitive health concerns that people may hesitate to share openly because of family expectations, cultural or religious sensitivities, or fear of social judgement. This may be especially relevant where the cost of consultation, distance from healthcare facilities, long waiting times, or social barriers make access to professional healthcare difficult. Studies from Pakistan have reported that 69% of digitally connected urban youth had used generative AI for health-related purposes, while a survey of university students in Lahore found that 80.5% searched online for symptoms, 70.7% used online information for self-diagnosis and 56.3% for self-prescription.[1,2] Although these findings are based on selected urban and university populations and cannot represent the whole country, they indicate the growing role of AI applications and online health information in influencing people's health perceptions and decisions about their health. AI can help people understand their health conditions, prepare questions to ask their healthcare professionals and obtain general information about medicines and treatment options. However, real concern arises when people start acting on the information they receive, particularly when they take it as medical advice for their own condition. This can be risky when the information relates to antibiotics, pregnancy, serious infections, tuberculosis, heart disease, cancer, medicine doses or stopping prescribed treatment. In an evaluation of 39 medication-related questions, only 26% of ChatGPT responses were considered satisfactory for directness, accuracy, completeness and relevance. All eight responses that included references contained at least one fabricated reference.[3] These findings highlight the need to exercise caution when using AI-generated information to make decisions about medicines and treatment. Language is another important consideration in Pakistan. A study comparing ChatGPT responses to questions about total hip arthroplasty in English and Urdu found that Urdu responses required considerably more clarification than English responses.[4] A 2026 evaluation of medical question-answering systems also reported lower performance in Urdu than in English.[5] These findings reflect the need to assess the quality of AI-generated health information in Urdu and the regional and local languages spoken across the country. Translation alone is not enough. Responses should also be relevant to local disease patterns, health needs, available services and levels of health literacy. International guidance provides useful direction on the safe use of AI in healthcare. The World Health Organization (WHO) emphasises safety, effectiveness, transparency, risk assessment and independent evaluation, as well as cooperation among regulatory authorities, healthcare professionals, developers and patients.[6,7] For Pakistan, these guidelines need to be adapted to the country's own healthcare context. They should take account of communicable diseases, maternal and child health, the growing burden of non-communicable diseases, language diversity, unequal access to healthcare, available resources and the quality of health data. Pakistan has already taken steps towards a broader policy framework for artificial intelligence and digital development. The National Artificial Intelligence Policy provides a national basis for its responsible development and use.[8] In addition, the Ministry of National Health Services, Regulations and Coordination, in collaboration with the Pakistan Digital Authority, has started work on a Digital Sectoral Plan for Healthcare through consultations with federal and provincial stakeholders. Priorities identified include unified medical records, a centralized complaint management system with clear escalation mechanisms, improved referral systems and automation of inspection processes.[9] These developments provide a useful starting point. Further health-specific guidelines are needed to set clear standards for the quality, safety, accuracy, privacy and local validation of AI tools, and to define the responsibilities of those involved in their development, regulation and use. A national system for monitoring risks associated with the use of AI in healthcare should also be considered under the Ministry of National Health Services, Regulations and Coordination. The roles and responsibili-

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ties of the Pakistan Digital Authority, DRAP, provincial health departments, healthcare commissions and professional regulatory bodies should be clearly defined, with each acting within its respective mandate. The centralized complaint management system identified in the Digital Sectoral Plan could provide a starting point for reporting and following up on concerns related to AI in healthcare. Pakistan already has an established pharmacovigilance system through DRAP, which allows patients, caregivers and consumers to report adverse events related to medicines.[10] This is a useful example of public reporting, although AI-related complaints would require a separate process for assessment and follow-up. Technology developers should be responsible for continuously monitoring the safety and performance of their applications, reporting serious problems, correcting identified flaws, providing regular updates and reassessing their products to ensure that improvements have addressed the concerns. Applications that continue to pose risks should be modified, restricted or withdrawn as appropriate. The relevant regulatory authorities should investigate complaints, follow up on identified risks and take appropriate action where required. Clear procedures are needed to ensure that problems are not only reported but also corrected and that patients are protected from harmful applications and misleading health information. Similarly, guidelines for healthcare professionals should address the responsible use of these tools in diagnosis, treatment planning and patient management, while maintaining professional accountability and clinical judgement. Applications intended for public use should provide reliable information, clearly explain their limitations, identify warning signs that require medical attention, guide users towards appropriate healthcare services and include warnings about the safe use of medicines. Their performance should be assessed in Urdu and the regional and local languages spoken across the country. Public awareness and professional education are equally important to help people understand the benefits, limitations and risks of these technologies. Particular attention should be given to the appropriate use of antibiotics and antimicrobial stewardship. Healthcare professionals should also be able to assess the information provided by these tools critically before using it in clinical practice. The objective should be to make artificial intelligence a safe and useful part of healthcare in Pakistan. It should improve access to understandable health information and support healthcare professionals, while ensuring that decisions requiring diagnosis, prescription or individualized treatment remain appropriately guided by qualified professionals. AI should support, not replace, clinical judgement, professional responsibility or the patient-doctor relationship.

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