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Editorial

Artificial Intelligence (AI) in Medical Education and Health Care

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Artificial Intelligence (AI) is revolutionizing both medical education and healthcare delivery. In education, AI enables individualized learning, virtual simulations, and automated exams, helping students acquire clinical skills efficiently. AI-powered tutoring programs and virtual patients are examples of tools that improve diagnostic reasoning and decision-making.

AI is transforming medical education and the training of future medical practitioners. Among the main uses are: 1) Personalized Learning: AI systems are able to adjust to the demands of each individual student, offering customized feedback and content that enhances engagement and helps students retain information. 2) Simulation-Based Training: AI provides safe, controlled settings for clinical skill practice, procedure execution, and decision-making, improving diagnostic proficiency and lowering mistakes. 3) Assessment and Evaluation: AI can create tests, evaluate clinical abilities using AI-generated patients, identify areas in which students struggle, and expedite the process of creating assessments, saving teachers time. 4) Curriculum Development: AI may assist in the design and improvement of curriculum, guaranteeing their efficacy and relevance, by analyzing enormous volumes of medical literature and student performance data. 5) Improved Research Skills: AI tools enable students to swiftly get and combine data from extensive medical databases, supporting evidence-based research and education.

In healthcare, AI improves diagnostics, predictive analytics, personalized treatments, robot-assisted surgery, and administrative efficiency like, 1) Better Diagnosis: AI systems can examine test findings, patient records, and medical imagery (such as radiology and pathology) to identify illnesses earlier and more accurately than human analysis alone. 2) medication Discovery and Development: By discovering possible medication candidates, forecasting adverse effects, and improving clinical trial designs, artificial intelligence (AI) speeds up the drug discovery process while drastically cutting expenses and time. 3) Personalized Treatment Plans: AI makes it possible to create highly customized treatment plans that improve outcomes by evaluating each patient's own data, including genetics, medical history, and lifestyle. 4) Administrative Efficiency: AI frees up healthcare workers to concentrate more on patient care by automating repetitive chores like appointment scheduling, medical record management, and billing processing. 5) Patient Engagement and Monitoring: Chatbots and virtual assistants driven by AI offer round-the-clock patient assistance, medication reminders, health advice, and the ability to monitor patients remotely. 6) Robotic Surgery: AI improves the precision and control of surgical robots, resulting in less invasive operations, reduced complications, and faster patient recovery.

Nevertheless, these developments, issues with data privacy, moral usage, and the requirement for appropriate legislation and human supervision still exist. These issues include: a) Ethical Concerns: Careful thought must be given to matters such as algorithmic bias, data privacy, security, responsibility for AI judgments, and informed consent. b) Infrastructure and Data Quality: To be implemented successfully, AI systems need a strong technical foundation and enormous volumes of objective, high-quality data. c) Integration with Current Systems: It might be challenging to integrate AI tools with the workflows and IT systems used in healthcare today. d) Trust and Acceptance: It's critical to allay patient and healthcare

professional concerns about AI's participation in treatment. e) Training and Expertise: Multidisciplinary cooperation and training are required due to a knowledge gap between medical experts and AI system creators. f) Regulatory Approval: Because AI is developing so quickly, current regulatory frameworks frequently can't keep up.

The careful incorporation of AI education into higher health care education would boost Bangladesh's future medical workforce. Policymakers should encourage and coordinate professional societies' efforts to accelerate the responsible adoption of health care professionals.

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