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LETTER TO EDITOR

Comparative analysis of artificial intelligence chatbots in health care: Managing diabetic ketoacidosis during the COVID-19 era

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Dear Editor,

The coronavirus disease 2019 (COVID-19) pandemic has prompted a significant transformation in health-care delivery, underscoring the necessity for innovative solutions to tackle unprecedented challenges.[1,2] Among these innovations, artificial intelligence (AI) chatbots have emerged as vital tools, offering timely information and support to patients dealing with complex health issues.[3,4] This editorial examines the effectiveness of AI chatbots in generating discharge summaries for diabetic ketoacidosis (DKA) management, drawing insights from a comparative analysis of two leading chatbots: Sider Fusion AI Bot and Perplexity AI.

DKA is a serious diabetes complication that requires meticulous management and clear post-discharge instructions to ensure patient safety and recovery. The integration of AI chatbots into this process can enhance patient engagement and improve health outcomes. This study evaluates discharge summaries generated by Sider Fusion AI Bot and Perplexity AI to identify their strengths and limitations in real-world applications. Our evaluation is based on a case scenario from a 2021 Clinical Case Reports article detailing a patient with DKA resulting from COVID-19 and a recent diagnosis of type 1 diabetes.[5] A panel of two diabetologists and an endocrinologist assessed the chatbots' responses for competency, accuracy, relevance, informativeness, support capabilities, and overall communication skills. The goal was to explore the current capabilities of AI chatbots and their potential to assist health-care professionals and patients, especially in the context of COVID-19.

Both chatbots effectively captured key patient demographics and clinical conditions, including age, gender, and diagnoses of DKA and COVID-19 pneumonia. This consistency highlights the role of AI in reliably documenting essential patient information. However, their structural and detail differences have significant implications for patient care. The Sider Fusion AI Bot provided a comprehensive and organized discharge summary,

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emphasizing follow-up care, genetic testing options, and educational resources for patients and families. This is especially beneficial for those with complex conditions, such as latent autoimmune diabetes in adults and DKA, where understanding health details is vital for effective self-management. The detailed return precautions from Sider Fusion empower patients to recognize symptoms requiring immediate medical attention, potentially leading to faster interventions and better outcomes. In contrast, Perplexity AI offered a more concise summary, focusing on essential elements of the hospital course and discharge instructions. While this brevity can help patients seeking quick references, it risks omitting critical educational content that promotes a deeper understanding of their condition. Although Perplexity's inclusion of specific medication dosages aids adherence to treatment plans, the lack of comprehensive educational resources may leave some patients feeling unsupported during their transition to home care.

The evaluation of these AI-generated summaries highlights a critical aspect of health care: the need for tailored communication strategies that cater to individual patient needs. Patients who are more independent and familiar with their conditions may appreciate the clarity and directness of Perplexity AI's summary. Conversely, those navigating complex diagnoses may significantly benefit from the in-depth and supportive approach provided by Sider Fusion AI Bot.

As health care continues to evolve, the role of AI chatbots in patient care is likely to expand. Their ability to provide accurate and timely information can alleviate pressure on health-care professionals and enhance patient engagement. However, it is essential to recognize that the effectiveness of these tools depends on their capacity to meet diverse patient needs. The comparative analysis of discharge summaries generated by Sider Fusion and Perplexity AI underscores the importance of developing AI systems prioritizing comprehensive education and support, particularly for patients managing chronic conditions.

In conclusion, integrating AI chatbots into health-care presents an exciting opportunity to improve patient outcomes and enhance the efficiency of care delivery. As we navigate the complexities of post-pandemic health care, it is imperative to continue evaluating and refining these technologies to ensure they serve as effective partners in patient management. By prioritizing patient-centered communication and education, we can harness the full potential of AI in transforming health care for the better.

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Conflict of interest

The authors declare they have no competing interests.

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