Columbia Nursing Study Demonstrates the Need for Verbal Communication Data in Home Health Care

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A new study reveals the importance of integrating patient-nurse verbal communication data into patient risk identification models for home health care.

Results from the research published in the Journal of American Medical Informatics Association (JAMIA) have the potential to revolutionize how healthcare providers assess and manage high-risk patients.

Home health care is a critical service for over 6 million patients in the U.S., many of whom are 65 and older and suffer from chronic conditions. Unfortunately, one in three patients being cared for at home eventually requires an emergency department visit or hospitalization. Existing patient risk identification models, which primarily rely on electronic health record data, have only modest success detecting these high-risk patients.

The research team, led by Maryam Zolnoori, PhD, at Columbia University School of Nursing, audio-recorded 126 patient-nurse encounters involving 47 patients, eight of whom later experienced emergency department visits or hospitalization. The team reformulated the risk model to include three essential components: structured data from the Outcome and Assessment Information Set (OASIS), clinical notes, and verbal communication features.

Using advanced natural language processing methods to analyze patient-nurse interactions, the integration of verbal communication data improved risk models by 26%. The analysis also unveiled that high-risk patients tended to exhibit more risk-associated cues, expressions of "sadness" and "anxiety," and extended periods of silence during conversations.

"This development highlights the need for an evolved clinical workflow that routinely records patient-nurse verbal communication within the medical record," says Zolnoori, "potentially improving patient care, reducing hospitalization rates, and enhancing health care provider's ability to identify and address risks promptly during hospitalizations and emergency department visits."

To facilitate this innovative research, Columbia Nursing collaborated closely with VNS Health, one of the nation's largest home- and community-based healthcare nonprofits, where Zolnoori conducts clinical research.

Other study authors include Maxim Topaz, PhD, associate professor, Columbia Nursing; Zoran Kostic, Department of Electrical Engineering, Columbia University; Kathryn H. Bowles, School of Nursing at the University of Pennsylvania and Center for Home Care Policy & Research, VNS Health; Margaret V. McDonald, Sridevi Sridharan, and Sasha Vergez, Center for Home Care Policy & Research, VNS Health; and Ali Zolnour, School of Electrical and Computer Engineering, University of Tehran.

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