The Utilization of an Artificial Intelligence-Based Documentation System in Orthopaedic Surgery: Patient Perspectives

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INTRODUCTION:

The purpose of this study was to understand the patient's perspective on the impact of an artificial intelligence (AI)-based documentation system on patient-provider interactions. Specifically, we hypothesized that the use of the AI documentation software would positively impact patient-provider interactions, patient comfort, and patient satisfaction. Additionally, we hypothesized that the use of AI documentation software during the clinical encounter would allow for a more thorough discussion of the patient's physical exam, imaging findings, and diagnosis with the patient to improve the overall patient experience.

METHODS:

A prospective, survey-based study was conducted in an outpatient Foot and Ankle clinic at an academic, urban medical center. Inclusion criteria included new patients, ≥18 years whose clinic visit would be documented using an AI-based documentation system, (Knowtex software or Dragon Ambient eXperience (DAX). 102 consecutive participants were invited to participate. Two patients declined. 100 patients enrolled and were asked to complete a brief, anonymous survey following their visit, evaluating the patient experience and impact of the AI technology.

RESULTS:

Responses to the multiple-choice questions from the patient survey are detailed in Figures 1 and 2. While using an AI-based documentation system, 92% of patients were comfortable and 94% satisfied with the care they received. On a Likert scaling system from 1 to 5, the mean values were 4.59 and 4.68 for patient comfort and satisfaction levels, respectively. Patients reported perceived usefulness with the AI-based documentation system in review of physical examination (85%) and imaging findings (84%) as well as diagnosis and treatment plan (87%), among other areas, improving their overall experience. On a Likert scaling system from 1 to 5, the mean values ranged between 4.21 and 4.69, again demonstrating high levels of perceived usefulness across all categories.

DISCUSSION AND CONCLUSION:

The present study finds patients are comfortable and satisfied with the implementation of an AI-based documentation system in an outpatient orthopaedic setting. Moreover, patients reported perceived usefulness in promoting satisfactory patient-physician interactions and in review of physical examination, imaging, and diagnosis and treatment plans. AI technology can enhance patient-provider interactions, contributing to superior healthcare delivery and positive health outcomes.

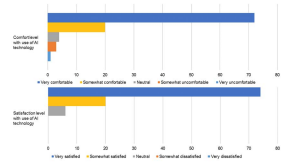

Figure 1. Assessment of patient comfort level and satisfaction with their physician using an AI-based documentation system.

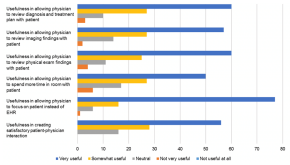

Figure 2. Assessment of patient perceived utility of an AI-based documentation system with regards to patient-physician interactions and patient experience.

Table I Patient Ratings of AI-Based Documentation System in Outpatient Orthopaedic Encounters According to Comfort and Satisfaction Levels

Score*	Encounter Component
4.59 +/- 0.79	Patient comfort level
4.68 +/- 0.58	Patient satisfaction level

Patient responses were recorded with range of values from 1= Very uncomfortable/dissatisfied to 5= Very comfortable/satisfied.
*Represented by mean +/- standard deviation

Table II Patient Ratings of Perceived Utility of AI-Based Documentation System in Outpatient Orthopaedic Encounters

Score*	Encounter Component
4.40 +/- 0.75	Patient-doctor interaction
4.69 +/- 0.63	Physician focus on patient instead of EHR
4.21 +/- 0.93	Time in room with patient
4.41 +/- 0.84	Review of physical exam findings
4.39 +/- 0.80	Review of imaging findings
4.44 +/- 0.79	Review of diagnosis and treatment plan

Patient responses were recorded with range of values from 1= Not useful at all to 5= Very useful. *Represented by mean +/- standard deviation