Clinical Nurses' Readiness to Interpret AI-powered Prediction
A Quantitative Assessment

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Introduction

- **AI integration in healthcare is accelerating**, offering new tools for clinical decision-making and early risk prediction.
- Yet, **challenges remain** – notably in data bias, model transparency, and the interpretability of AI outputs.
- As **frontline users of AI-powered tools**, nurses: increasingly encounter these systems in daily care settings.
- However, **nurses' readiness to interpret AI-driven predictions**—particularly those from probabilitstic models—remains underexplored.
- **Core statistical literacy** (e.g.. sensitivity, specificity, CIs) is essential for meaningful engagement.
- A knowledge gap in these areas may limit nurses' ability to safely and critically apply AI in care.
- This study aims to quantitatively assess clinical nurses' understanding of key-relevant statistical concepts and identify educational needs for future training and implementation.

Methods

- **Study Design**

Cross-sectional survey conducted as part of a larger project to develop an AI-powered CDS system for predicting and preventing inpatient falls at a tertiary hospital in Seoul.

- **Participants**

Nurses from six units where the CDS service with a fall prediction model was piloted. 60 nurses randomly selected, stratified by unit, role (manager vs. staff), and experience (≤1 year, 1–5 years, ≥5 years), 9 per unit.

- **Measurements**

- Knowledge of statistical concept and predictive model: survey tool[1]
- Numeracy competency: Objective Numeracy Scale (Lipkus et al.)[2] , S-NUMi [1], and Subjective Numeracy Scale (SNS) [3].

Results

- Overall knowledge score: **85.6/100** (95% CI: 82.6–88.5).
- Weakest area: understanding of confidence intervals.

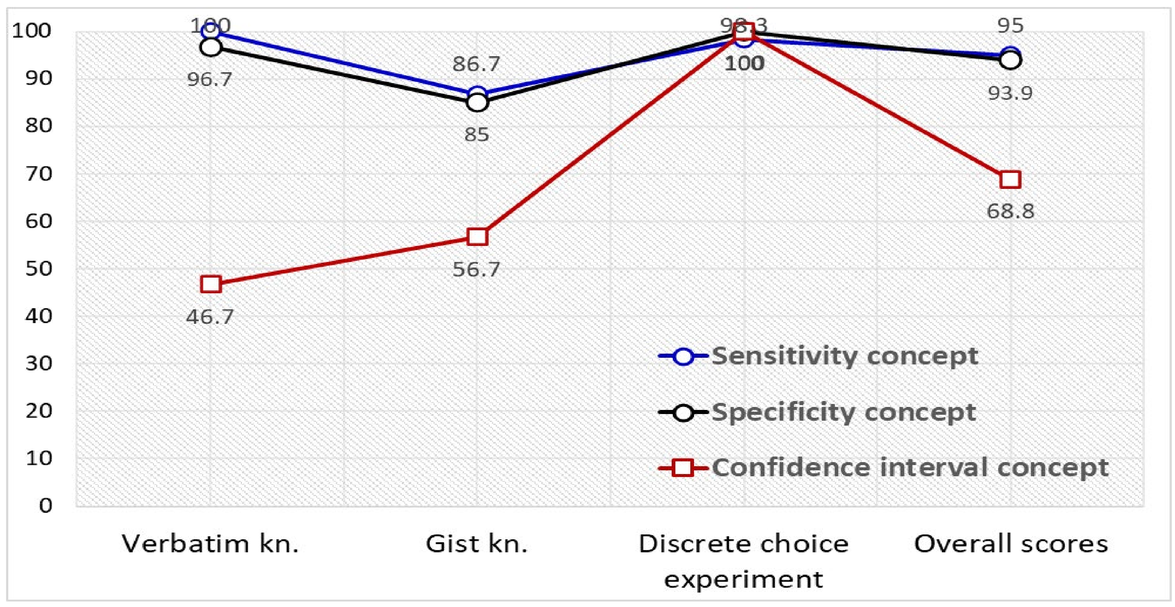

Figure 1. Nurses' knowledge scores on interpreting statistical concepts

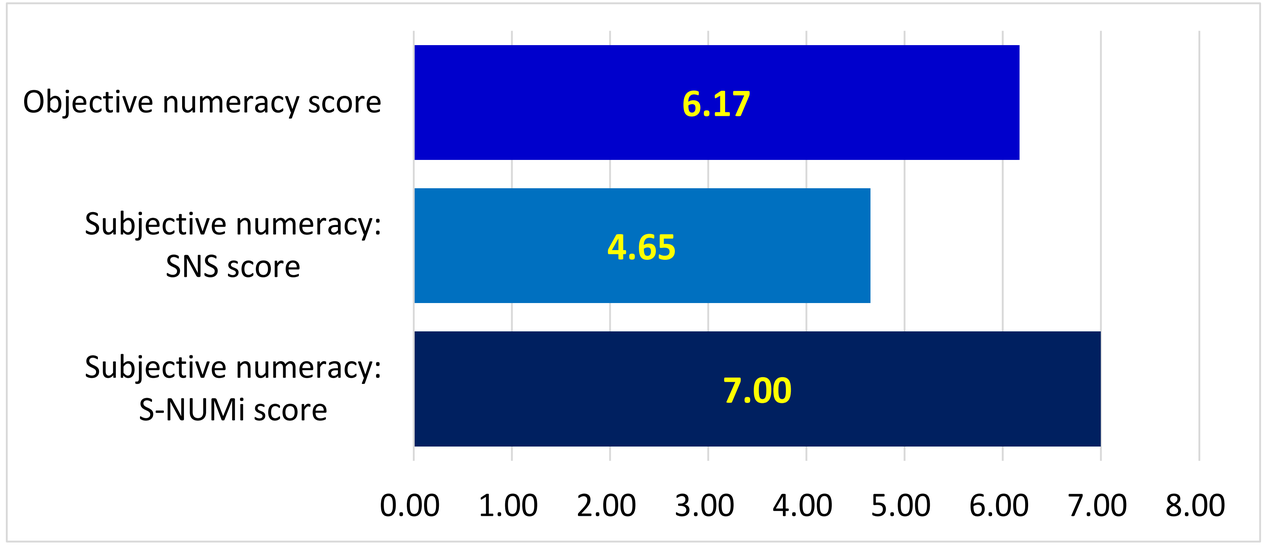

Figure 2. Nurses' numeracy scores

Conclusions

- Nurses were easily confused and overlapping the concept of confidence intervals with others, despite higher numeracy levels than the general population.
- Tailored education is essential for effective use of AI-enabled applications.

References

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