ADOPTION OF AI CLINICAL DECISION SUPPORT SYSTEMS IN PRIMARY CARE: AN EVALUATION OF PHYSICIAN ACCEPTANCE

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INTRODUCTION

AI-based clinical decision support systems (AI-CDSS) have been increasingly deployed to assist primary care physicians in diagnosis and treatment planning. However, real-world adoption remains suboptimal.

OBJECTIVES

Develop and test a structural model for physician **acceptance of AI-CDSS**, grounded in the Technology Acceptance Model (TAM), trust literature, and clinical autonomy frameworks.

METHOD

* **Cross-sectional Survey** with 619 Brazilian primary care physicians

* **Structural Equations Modeling** (SEM)

* **Use of established scales** from TAM (Behavioral Intention, Attitude towards use, Perceived Ease of Use, Perceived Usefulness), Trust in AI, and Perceived Clinical Autonomy.

RESULTS
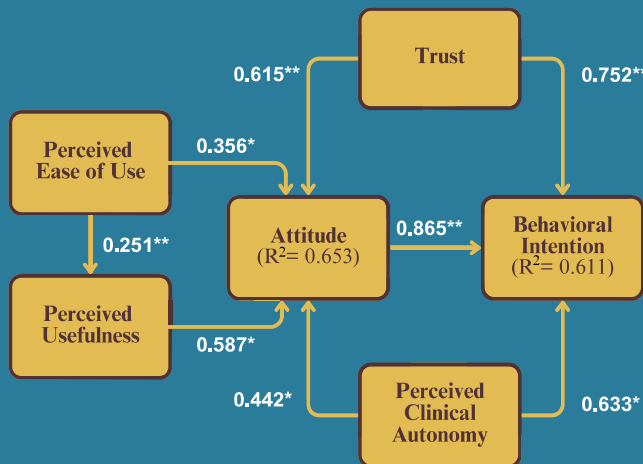
**p<0.001   *p<0.05

Sample Primary Care Physician distribution:
* 8.5% National Health System (SUS)
* 21% Private Sector (Health Plan or Direct Pay)
* 70.5% Dual Role (SUS and Private Sector)

* **Significant effects for these relationships:**

  * physician's **Clinical Autonomy** perceptions on **Attitude** and **Intention to Use AI-CDSS**,
  * physician's **Trust** in AI on **Attitude** and **Intention to Use AI-CDSS**,
  * the impacts of **PEU** and **PU** on **Attitude towards using AI-CDSS**.

* **The model could explain:**

  * **65.3%** of variance in the physician's **Attitude**,
  * **62.2%** of variance in the physician's **Behavioral Intention** to use AI-CDSS.

CONCLUSIONS

* **Several factors influence physicians in the adoption of AI-CDSS:**

  * trust in AI technologies,
  * perceptions of clinical autonomy,
  * physician's attitude towards AI,
  * physician's perception of AI-CDSS usefulness and ease of use.

* **Implications for management:**

  * Efforts to build trust in AI through transparency and training may greatly improve primary care personnel's acceptance of AI-CDSS and reduce their resistance to it.

  * Ensuring that AI-CDSS is deployed to preserve physicians' clinical autonomy may enhance its uptake.

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