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## Problem & Relevance

- Reduced eHealth literacy may impact the care of millions of patients and exacerbate health inequities.
- The Centers for Medicare and Medicaid (CMS) incentivize widespread use of the Patient Reported Outcomes Measurement Information System (PROMIS)<sup>1</sup>, which measures physical function, pain, mental health, and social support.
- Level of eHealth literacy may interfere with participation in electronically-delivered patient-reported outcomes measures (PROMs).
- The relationship between eHealth literacy and PROMIS computerized adaptive test completion has not been examined previously.*

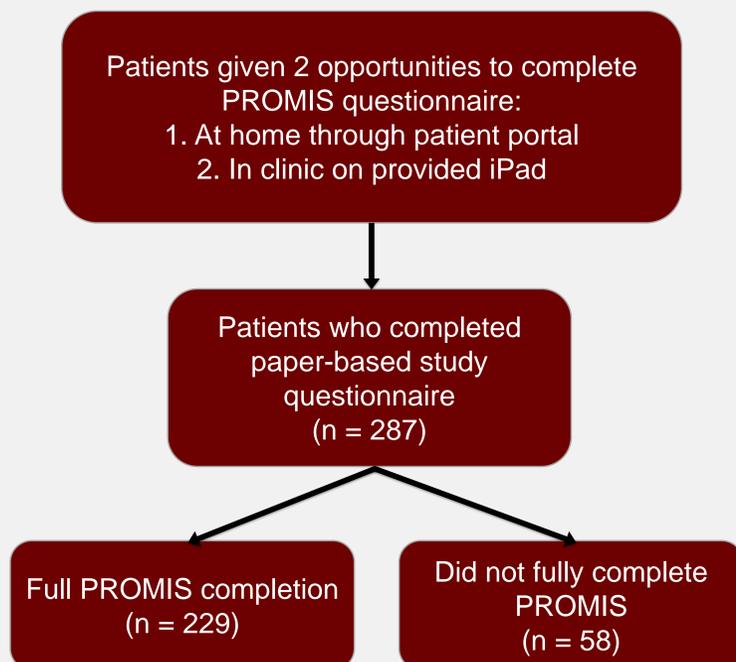
## Goals

- Examine the relationship between eHealth Literacy scores and completion rates of PROMIS questionnaires in orthopaedic patients
- Evaluate overall eHealth literacy level of orthopaedic patients at UCM

## Strategy

- Administered paper-based questionnaire to UCM orthopaedic patients
- June 2022 to August 2022 – Orthopaedic Clinic Patients
- We measured:
  - eHealth Literacy Scale (eHEALS)
  - PROMIS completion level
  - Sociodemographic characteristics

Figure 1: Consort Diagram



## Patient Population

- Total N=287
- Average age: 49.5 years old
- 60.2% (n=173) Black or African American
- 45.4% (n=130) College Graduate or higher
- 79.8% (n=229) Fully Completed PROMIS

Figure 2: No Difference in Median eHealth Literacy Scores When Stratified by Level of PROMIS Completion (Max. Score = 40)

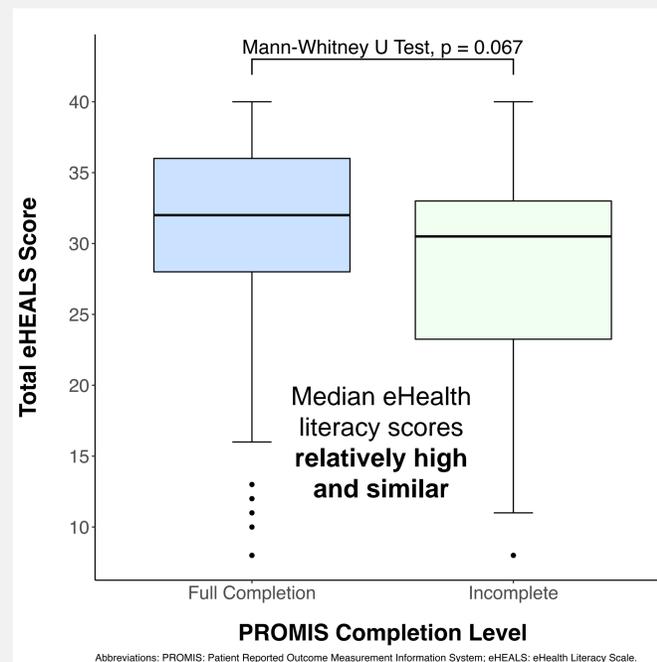


Table 1: eHealth Literacy Level Significantly Differed by PROMIS Completion Group

Characteristic	PROMIS Completion Level		p-value <sup>2</sup>
	Full Completion, N = 229 <sup>1</sup>	Incomplete, N = 58 <sup>1</sup>	
<b>eHealth Literacy Level</b>			<b>0.018 *</b>
Low <26	42 (18.5%)	19 (32.8%)	
High ≥26	185 (81.5%)	39 (67.2%)	
Unknown	2	0	

Abbreviations: PROMIS: Patient Reported Outcome Measurement Information System  
<sup>1</sup> n (%)  
<sup>2</sup> Pearson's Chi-squared test

- The **incomplete PROMIS group** contained a **higher proportion of patients with low eHealth literacy**.
- Overall, **21% (n=61)** exhibited **low eHealth literacy** (defined by an eHEALS score < 26).
- No significant differences in age, race/ethnicity, annual income, employment status, or education between the two groups.

## Results

Table 2: eHealth Literacy Scale Score was a Significant Predictor of PROMIS Completion

Characteristic	OR (95% CI) <sup>1</sup>	p-value
<b>Total eHEALS Score</b>	<b>0.93 (0.88 to 0.99)</b>	<b>0.015</b>

Abbreviations: eHEALS: eHealth Literacy Scale  
<sup>1</sup> OR = Odds Ratio, CI = Confidence Interval



- Lower eHealth literacy** associated with lower rates of PROMIS questionnaire completion.
- Each **one-point increase in eHealth literacy score** corresponds to a **7% reduction** in the odds of failing to complete PROMIS.
- Additive effect as eHealth literacy scores change by more than one point (e.g. a 10-point difference in eHealth literacy score equates to a 70% change in odds of PROMIS completion)*

## Conclusions

- eHealth literacy score** was a **significant, independent predictor of PROMIS completion** when controlling for sociodemographic characteristics.
- Over **1 in 5 patients** demonstrated **low eHealth literacy**.
- Mitigating eHealth literacy barriers** when employing PROMIS is needed to improve patient care and reduce potential health inequities in orthopaedic surgery.

## Next Steps



## Acknowledgements

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