馬偕紀念醫院
MacKay Memorial Hospital

Effectiveness of the Health Literacy Education Program for Medical Student Clerkships

Yen-Ting Lee[1], Yu-Chen Chang[2], Hsiao-Chi Ma[2],
Wei-Hsin Huang[2] , Chi-Wei Lin[3], **Lee-Ching Hwang**[2,4]

1 Department of Medical Education, MacKay Memorial Hospital
2 Department of Family Medicine, MacKay Memorial Hospital,
3 Department of Family Medicine, E-Da Hospital
4 School of Medicine, MacKay Medical University

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International Network of Health Promoting Hospitals & Health Services

The Critical Element of Global Health

Health literacy serves as tne foundational link translating medical information into clinical success.

Quality of Life

Low health literacy correlates directly with reduced quality of life and diminished long-term health outcomes.

Public Health

Widely recognized as a critical pillar for executing and sustaining global health initiatives.

Patient Empowerment

Equips individuals to actively understand and effectively utilize vital health information.

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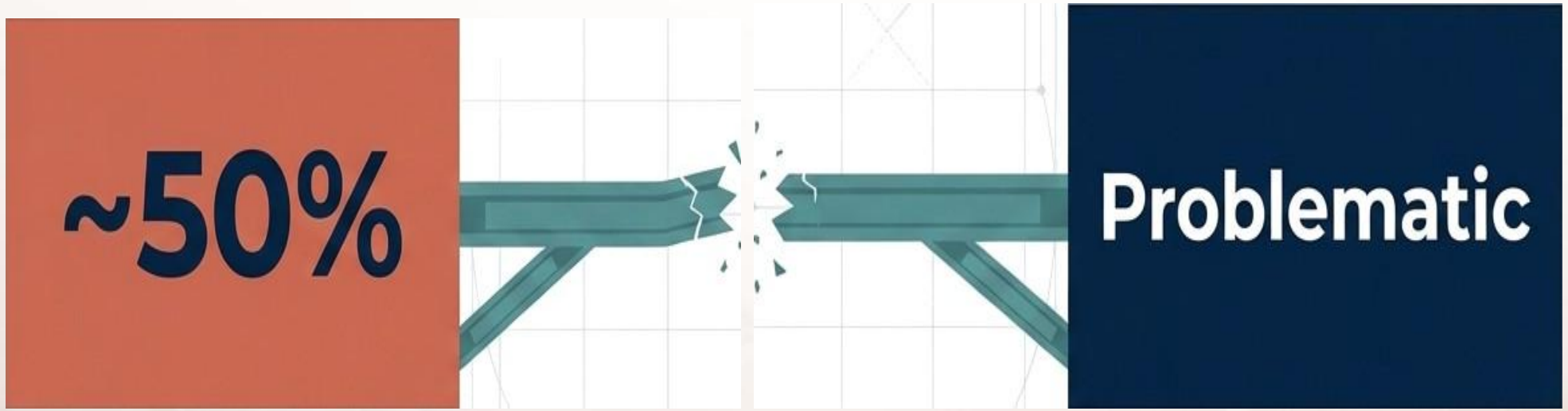
A Critical Vulnerability in the Care Continuum



The Public Barrier

Nearly half of the adults in Taiwan currently struggle with limited health literacy.

The Provider Barrier

Baseline evaluations indicate that the average medical student falls into the problematic category for health literacy competencies.

The communication gap is bilateral. Patients lack the framework to comprehend, while future providers lack the foundational literacy to translate complex clinical data.

The Evolution of Health Literacy Education for Health Professionals

Pedagogical Approaches

Teach-back method

Simulation videos

Case-based learning

Card-based board games

Digital drawing

Service-learning experiences

Standardized patient practice

While experiential methods significantly enhance medical students' competence, confidence and familiarity, existing literature often lacks detailed reporting *on* evaluation frameworks and program characteristics

Study aims

- **Our study** aimed to

  integrate **health literacy** into **medical clerkship curricula** and

  evaluate the effectiveness of our **educational programs**.

Establishing the Clinical and Ethical Framework

The Setting

MacKay Memorial Hospital –Family Medicine Clerkship Course

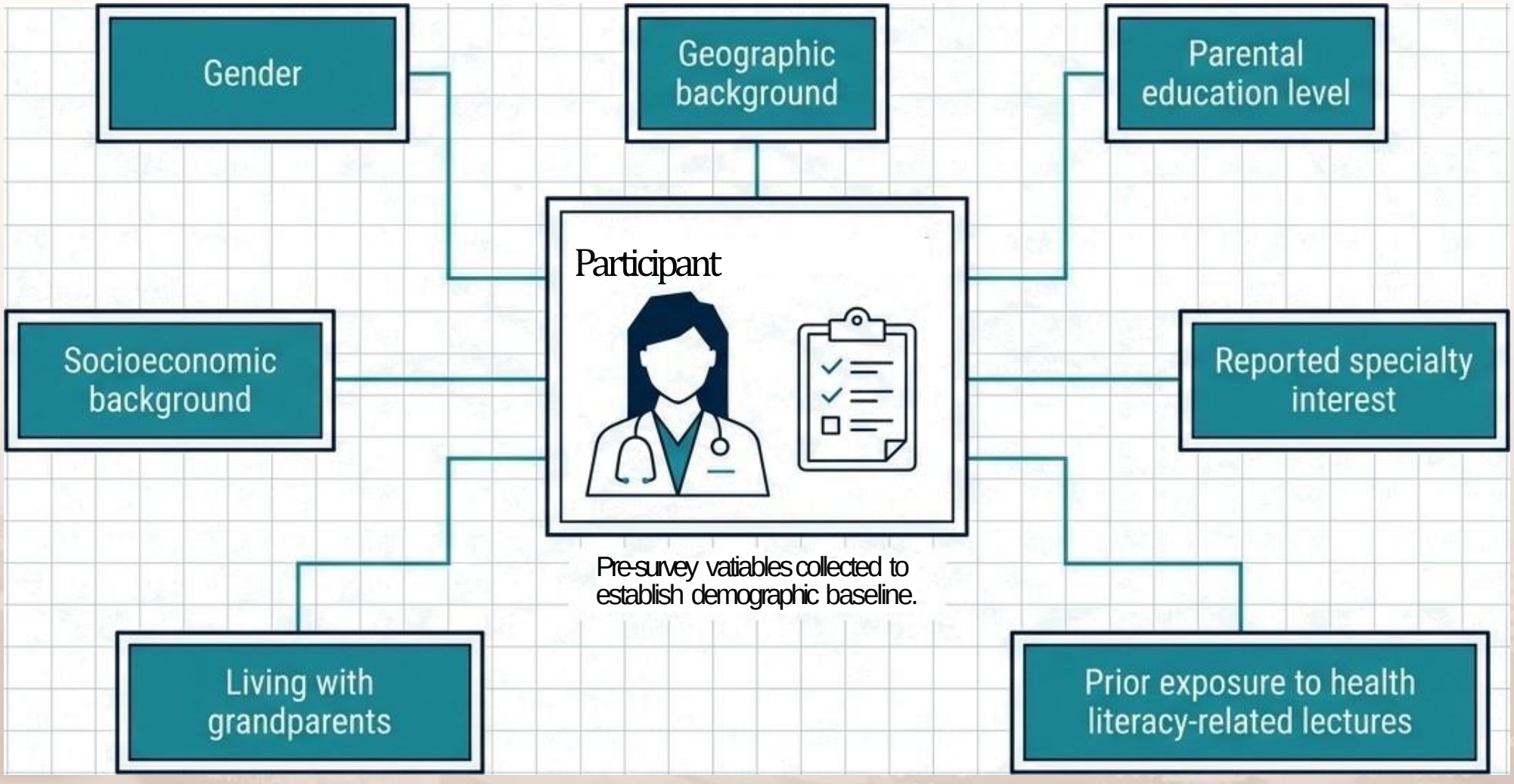
Study Duration:
October 2023 to January 2026

Target Cohort:
5th-Year Medical Students at MacKay Medical College

Ethical Compliance

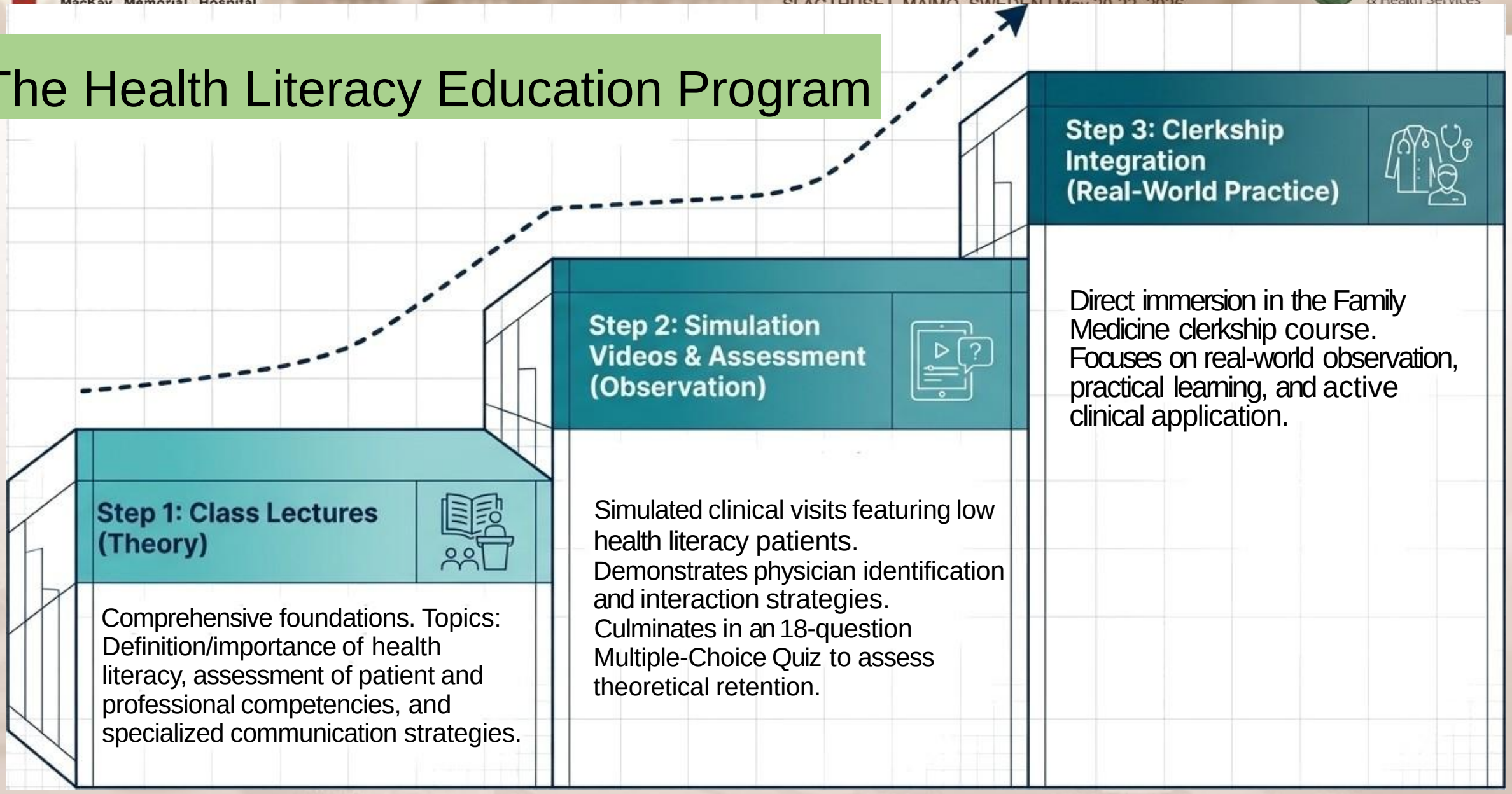
- Adherence to Helsinki Declaration guidelines.
- Written informed consent required.
- Exclusion criteria applied for incomplete data sets.
- Approved by Institutional Review Board (IRB No. 23MMHIS404e).

Baseline Profiling and Demographic Architecture



Pre-survey vatiables collected to establish demographic baseline.

The Health Literacy Education Program

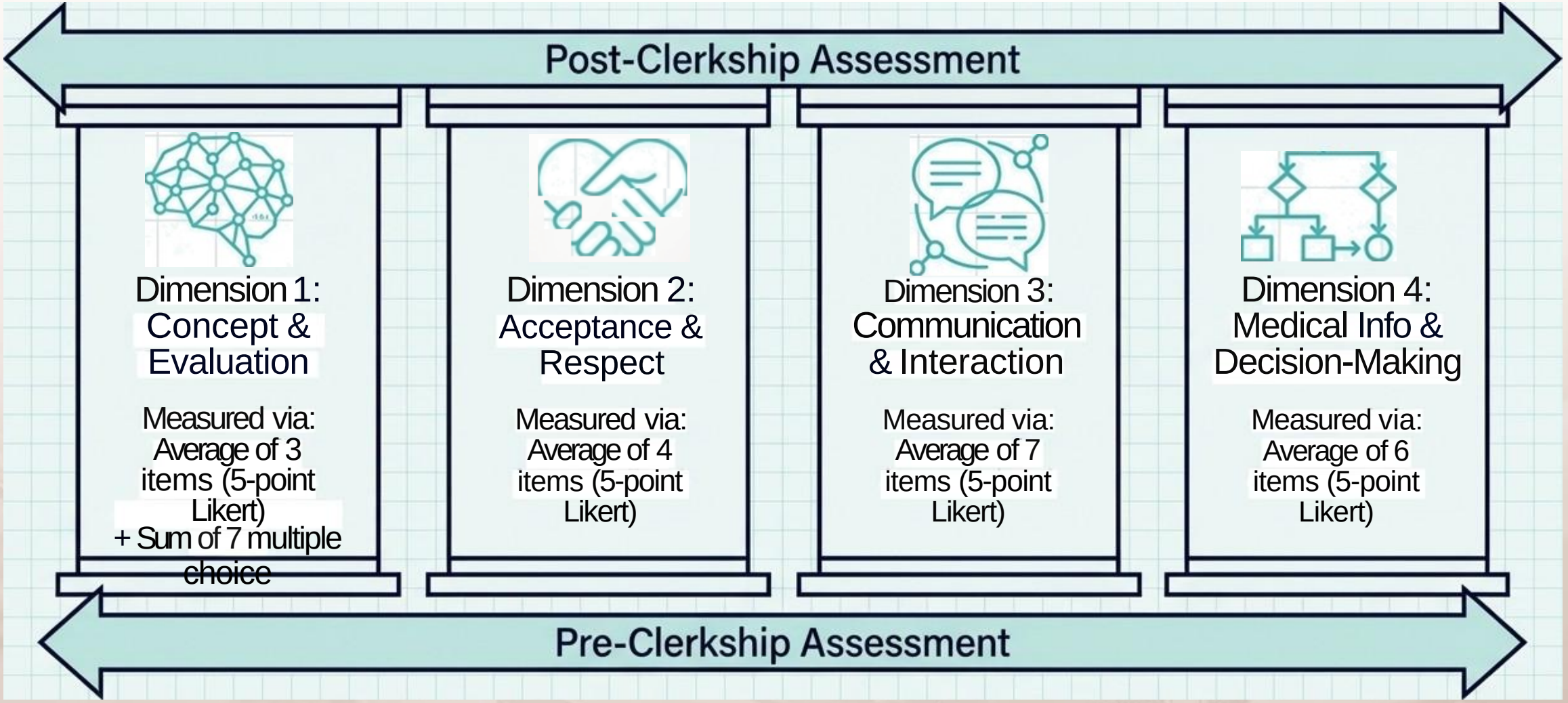


Dimensional Mapping of Health Literacy Competencies

Measurement Instrument: "Health Literacy Scale specific for Taiwan" (Liu et al.).
A validated tool designed to measure physician health literacy competencies within the context of Taiwan's healthcare system.

Dimension 1: **Concept and Evaluation** Focusing on foundational understanding	Dimension 2: **Acceptance and Respect** Focusing on physician's attitude and empathy
Dimension 3: **Communication and Interaction** Focusing on relational mechanics	Dimension 4: **Medical Information and Decision-Making** Focusing on clinical application and consensus

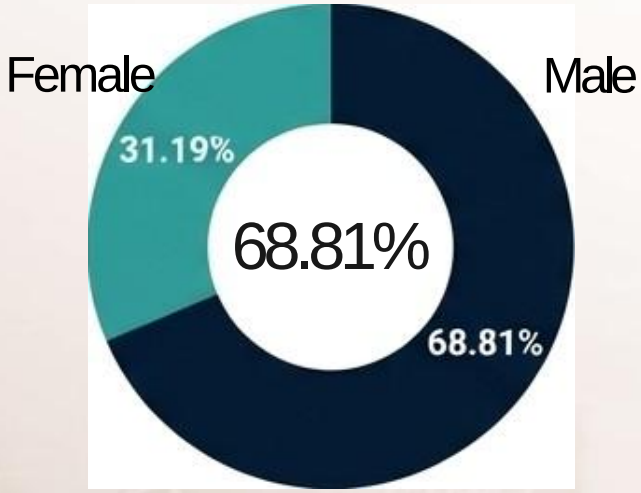
The Evaluation Framework: Measuring Health Literacy Across Four Core Dimensions



Note.' All quantitative results isolate the intervention's specific impact by comparing paired pre- and post-assessments.

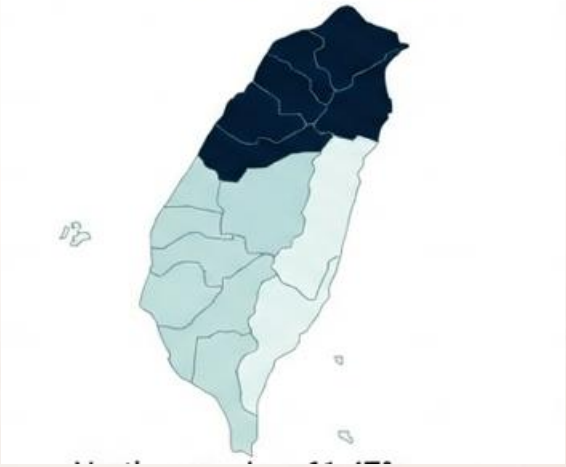
Study Participants: N = 109

Gender & Living



87.16%
Do not live with grandparents

Geographic Origin



Northern region: 61.47%
Central region: 14.68%
Southern region: 3.76%
Mountainous/Islands: 15.41%
Eastern region: 3.67%
Overseas: 0.92%

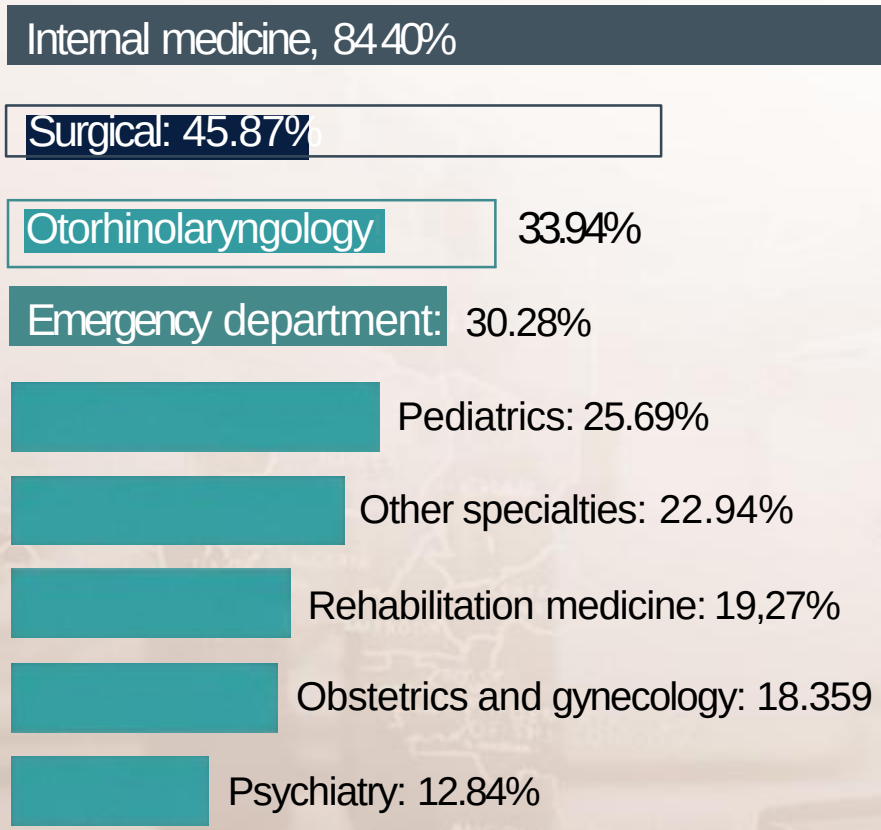
Socioeconomic & Education

Socioeconomic Status	
Middle-income: **58.72%**	Average: **40.37%**
Low-income: **0.92%**	Wealthy: **0.00%**

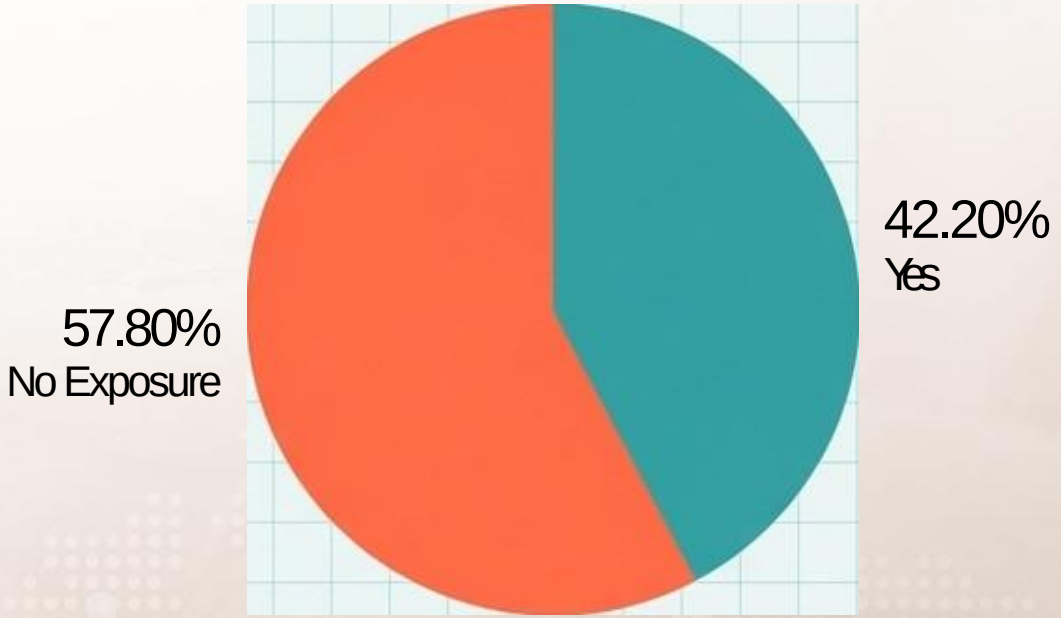
Parental Education	
College: **53.21%**	Graduate school: **34.86%**
Senior high: **11.01%**	Below junior high: **0.92%**

High Interest in Core Clinical Specialties, Yet Lacking Prior Health Literacy Exposure

Specialty Interests (Multiple Selections)



Prior Exposure to Health Literacy



Insight• The vast majority of clerks intend to enter highly interactive fields underscoring the critical necessity of formalizing health literacy education to address the 57.8e/ exposure gap.

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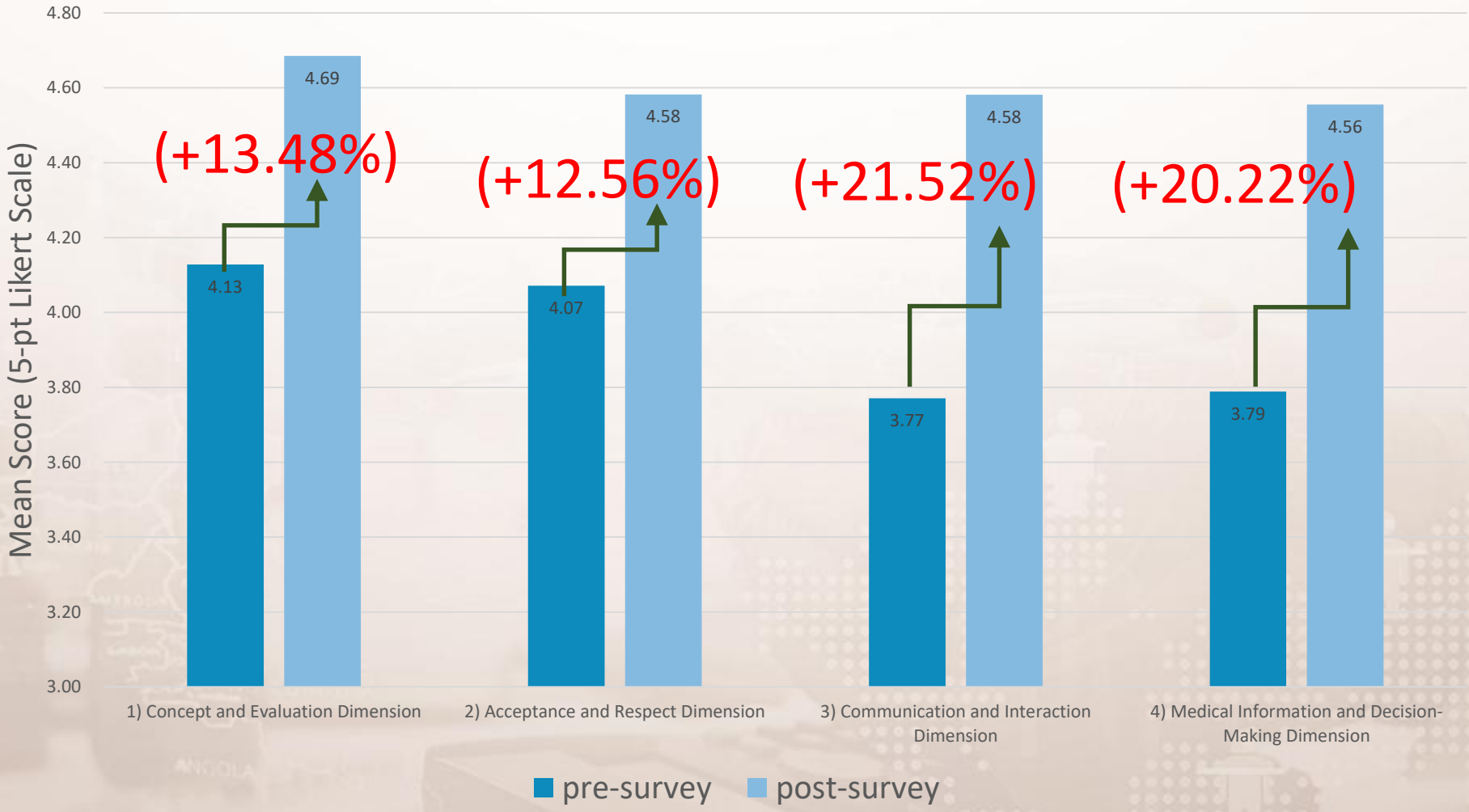
Table: Health Literacy Questionnaire Mean Item Scores Comparison between Pre- and Post-Surveys

	Scores			Average growth rate
	pre-survey	post-survey	*P* value	% with 95% CI
1) Concept and Evaluation Dimension				
Average of 3 items, 5-pt Likert scale	4.13	4.69	<0.001	13.48 (11.15-15.78)
Sum of 7 MCQs	4.11	5.3	<0.001	29.02 (21.11-37.47)
2) Acceptance and Respect Dimension				
Average of 4 items, 5-pt Likert scale	4.07	4.58	<0.001	12.56 (10.08-15.24)
3) Communication and Interaction Dimension				
Average of 7 items, 5-pt Likert scale	3.77	4.58	<0.001	21.52 (18.58-24.77)
4) Medical Information and Decision-Making Dimension				
Average of 6 items, 5-pt Likert scale	3.79	4.56	<0.001	20.22 (11.29-28.97)

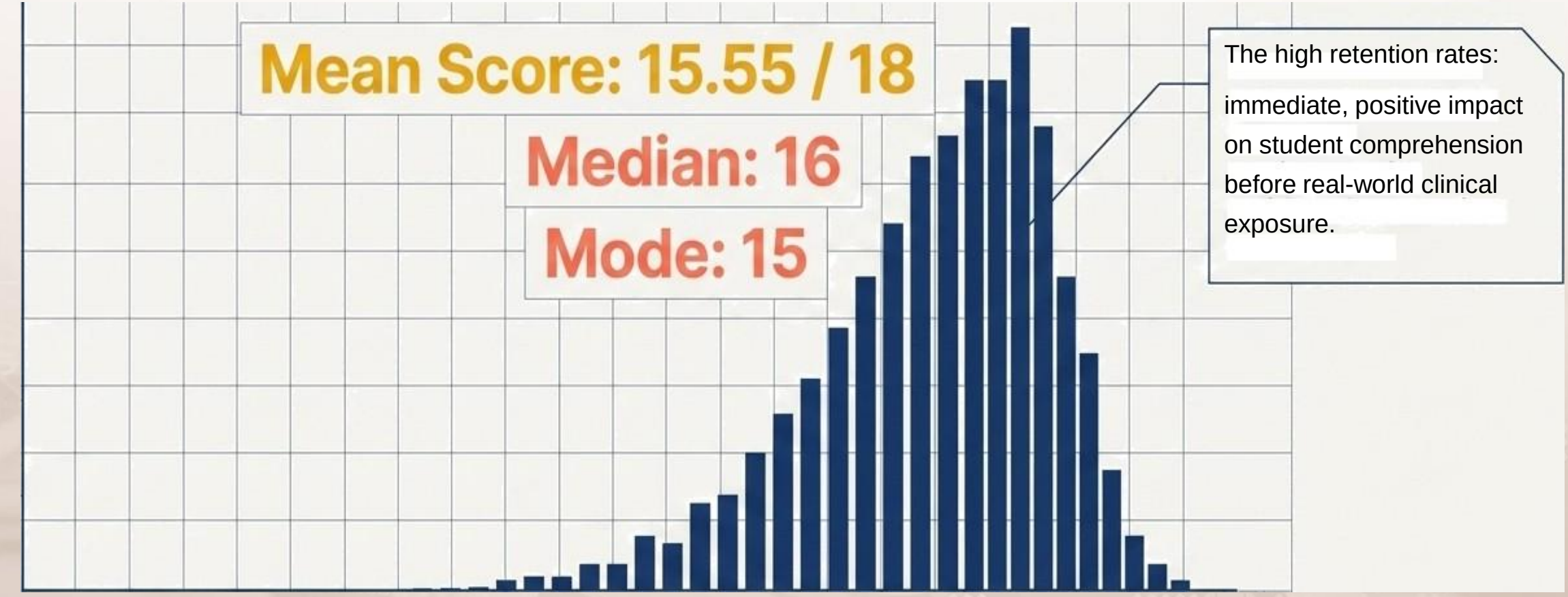
Comparison of Self-awareness and Confidence for Health Literacy Competence between Pre-survey and Post-Survey



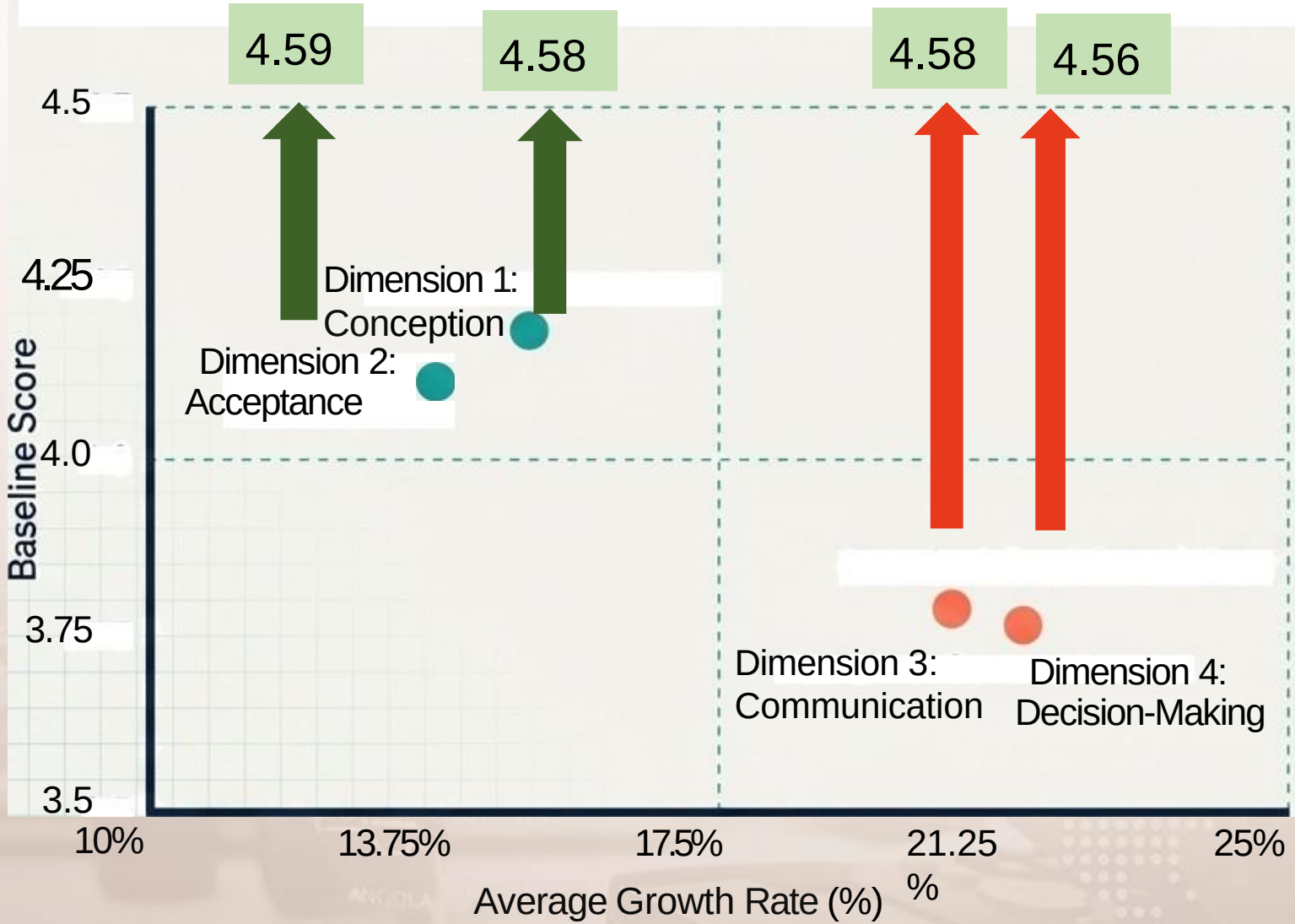
Significant Competency Growth Across All Measured Dimensions

Validating Foundational Comprehension

Post-lecture/simulation assessments demonstrate strong baseline mastery of health literacy concepts before clinical exposure.



Holistic Program Impact: The Intervention as a Clinical Equalizer



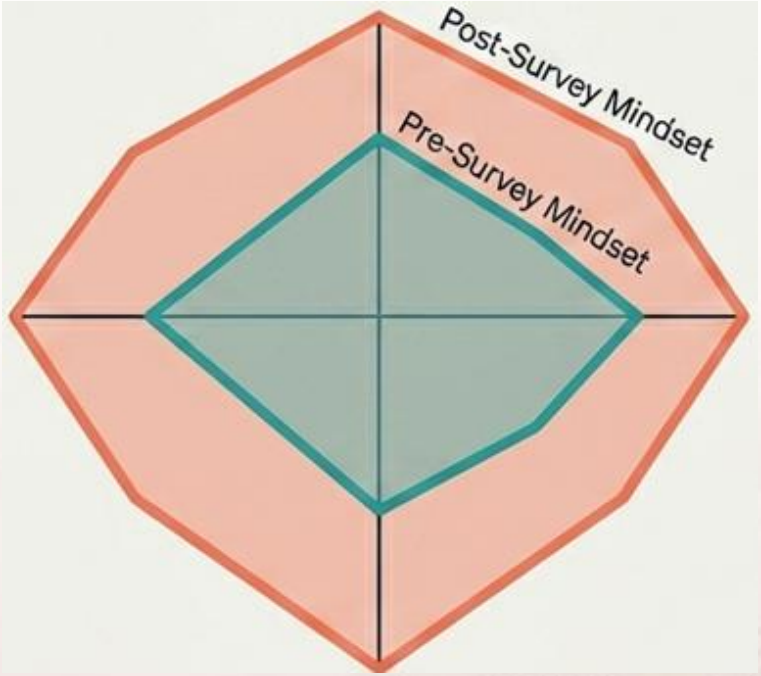
PRECISION-STAMPED · p < 0.001 · VALIDATION BADGE

Synthesis insight: The matrix clearly visualizes the program's vital equalizing effect. While it refined theoretical dimensions (Conception, Respect) that were already strong, its most profound impact was rapidly accelerating lagging practical skills (Communication, Decision-Making) up to par.

Beyond Objective Scores:
The Expansion of Clinical Self-Awareness and Clinical Confidence

Self-Awareness

Navigating Complexity



ClinicalConfidence

Patient Empathy

The objective, statistically significant score increases are mirrored by a subjective, psychological expansion. Students left the clerkship not just scoring better, but feeling equipped to handle real-world clinical encounters.

Discussion: The Value and Necessity of Health Literacy Education

Addresses Critical Knowledge Gaps

Overcomes the reality that 57.8% of students enter clerkships with zero prior exposure, despite heading into patient-heavy Internal Medicine (84.4%).

Equalizes Core Competencies

Proves that targeted curriculum can successfully bring lagging practical skills (communication and shared decision-making) up to the level of theoretical diagnostic perception.

Statistically Robust

The universal $p < 0.001$ outcome across all measured metrics and multiple-choice tests highlights the undeniable reliability and effectiveness of this specific programmatic framework.

Academic Context and Methodology Constraints

Ensuring data integrity by mapping study limitations

Diagnostic Matrix		
Methodology Focus	The Constraint & Reality	Future Mandate
Control Group	Absence of a control group. Ethically inappropriate to withhold health literacy educational opportunities from medical students.	Alternative comparative curriculum studies.
Follow-up Duration	Limited to a one-week period. Too brief to fully assess long-term behavioral changes.	Longitudinal studies with extended follow-up metrics.
Participant History	Prior exposure variance. Over 2/5 of participants self-reported prior enrollment in HL lessons.	Subgroup analysis: not statistically significant

Despite these constraints, the data proves a definitive positive impact on aggregate health literacy competencies.

Conclusion & Future Academic Applications

Definitive Conclusion

The Health Literacy Education Program is a highly effective, statistically proven intervention. It significantly elevates clerkship competencies, transforming tentative students into confident, effective clinical communicators.

Future Directions

1. Geographic Expansion

Broadening the curriculum to other regions to address the heavily Northern-skewed (61.5%) dataset and validate universal efficacy.

2. Longitudinal Tracking

Measuring long-term patient outcomes and sustained physician health-literacy practices as these clerks transition into their intended specialties (e.g., Internal Medicine, Surgery).