THE UNIVERSITY OF TEXAS AT AUSTIN

WHAT STARTS HERE CHANGES THE WORLD

CONNECTING THE DOTS Promoting Health Equity

Health Literacy and Management of Chronic Conditions in Ethnic/Linguistic Minority Groups

Miyong T. Kim, PhD, RN, FAAN

Professor, School of Nursing
Associate Vice President, Community Health Engagement
The University of Texas at Austin

November 4, 2014

Co- Authors

- Kim B. Kim, Ph.D, Korean Resource Center, Ellicott City, Maryland
- Hae-Ra Han, Ph.D RN FAAN, School of Nursing, Johns Hopkins University, Baltimore, Maryland
- Tam Nguyen, Ph.D RN, Connell School of Nursing, Boston College, Chestnut Hill, Massachusetts

Health Literacy

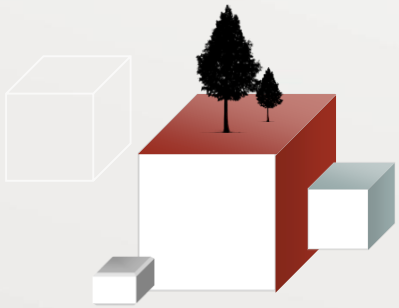
- **Definition**

> "The degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions."

• Berkman ND, DeWalt DA, Pignone MP, Sheridan SL, Lohr KN, Lux L, Sutton SF, Swinson T, Bonito AJ. *Literacy and Health Outcomes*. Evidence Report/Technology Assessment No. 87. AHRQ Publication No. 04-E007-2. Rockville, MD: Agency for Healthcare Research and Quality. January 2004.

What are the established facts?

- People with low educational levels, the elderly, the disabled, and first generation immigrants whose primary language is not English, are among the most venerable groups affected by low health literacy.



Unclear or Unknown

Nature of health literacy (HL)

Is it "knowledge" or "skill", or hybrid of both?

Underlying mechanism of HL

How it is related to other constructs in healthcare research (e.g., directly or indirectly?)

Consequences of Unknowns

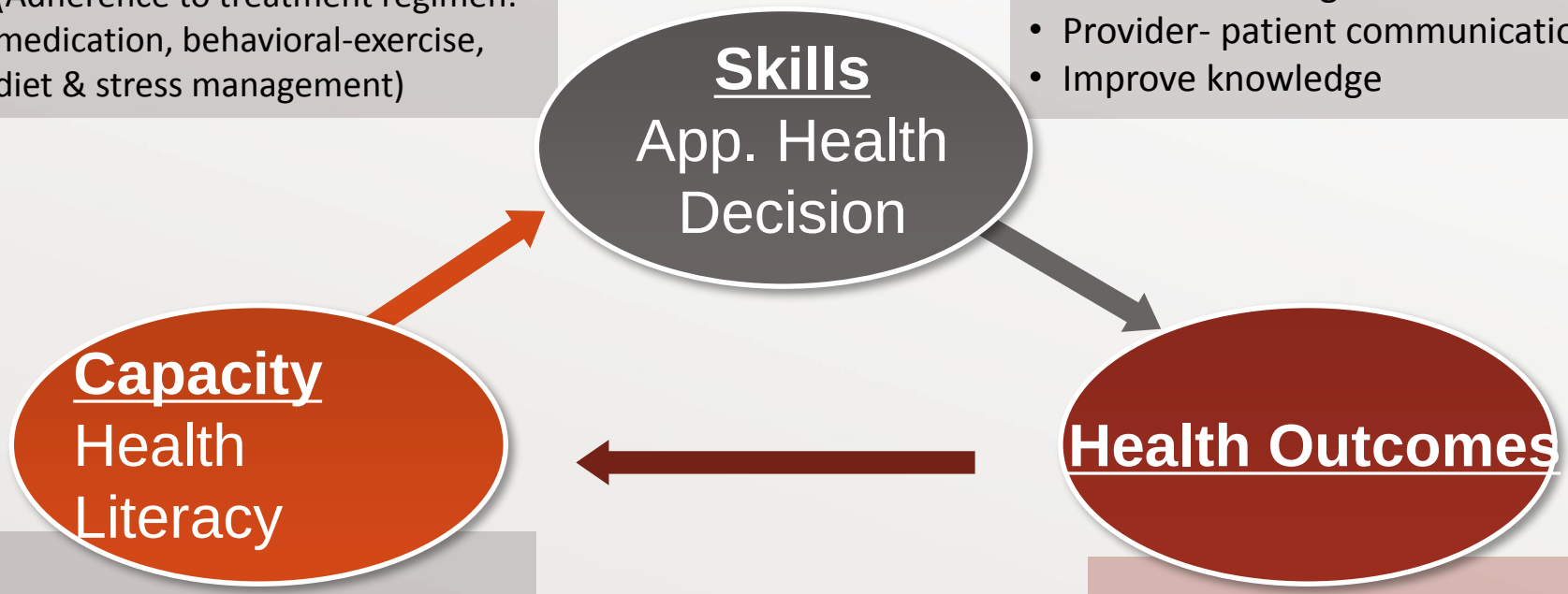
In spite of the important role of health literacy in the management of chronic conditions

- Few intervention studies on improving HL directly
- Difficulties with identifying barriers to improve HL as a means of improving chronic condition management

Conceptual Framework per AHRQ's HL Definition

Self Care skills
- Disease management skills (Adherence to treatment regimen: medication, behavioral-exercise, diet & stress management)

Health Care Service Utilization
- System navigation skills
- Insurance management skills
- Provider- patient communication
- Improve knowledge



Individual Characteristics
- Ethnicity
- Education
- Age
- Gender
- Disease severity

Health Outcomes
- HBP control
- Glucose control
- Quality of Life

2 HL Focused Clinical Trials (1)

Hypertension Control

- Korean American (KA) elderly with HBP (n=369)
- 2006 – 2012 (NHLBI)
- Intervention (18 months)
  - 6 weeks (12 hours) didactic education
  - Monthly motivational telephone counseling by RNs
  - BP home monitoring with monthly summary reports

Diabetes Management

- KA adults with type 2 diabetes (n=250)
- 2009 – 2014 (NIDDK)
- Intervention (12 months)
  - 6 weeks (12 hours) didactic education
  - Monthly motivational telephone counseling by RNs/CHWs
  - Dry blood sugar monitoring & diary

Implementing Strategy
Use CBPR approach with community partner
(Korean Resource Center)

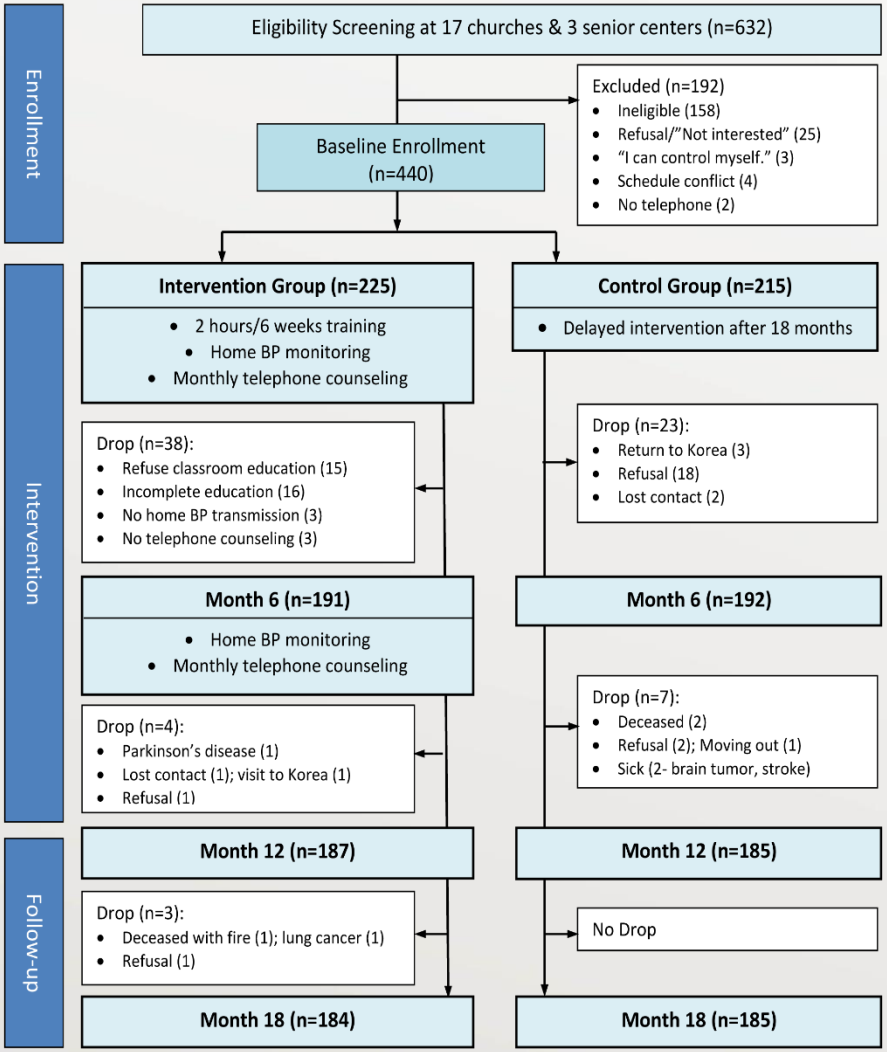
- Mission: To reduce health disparity & to improve quality of life in the Korean American community
- Established in 2001 by researchers and community leaders in BW region; not affiliated with universities/hospital/public agency and programmatically and financially independent
- Focusing on research and education on health promotion in the KA community, esp. hypertension, diabetes, depression, smoking, health insurance management

Benefit to working with community partner (KRC)

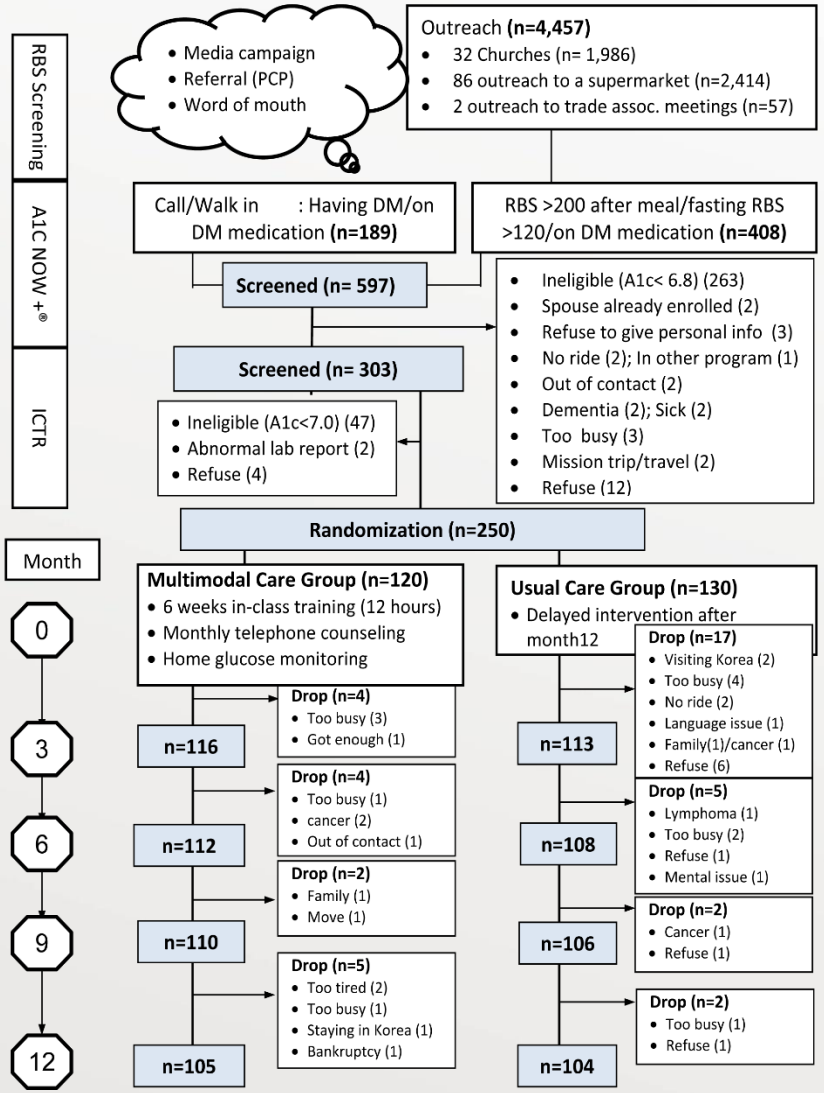
- Strong rapport with KA community (ethnic churches, KA organizations, and local/ethnic media)
- Collaboration with state/local health departments through coalitions & committees
- Capable of carrying out (behavioral intervention) clinical trials based on CBPR & self-help (planning, administration, recruitment/retention & evaluation)
- Performance:
  - Nine intervention and 12 dissemination projects
  - CHWs trained: 54
  - More than 30 peer-reviewed articles; 253 presentations to the KA community & outreach to more than 35,000 KAs in the region

CONSORT

Hypertension Study



Diabetes Study



Results

Hypertension Study

Demographics

Characteristics	Intervention (n = 184)	Control (n = 185)	Total (n = 369)	P value
Age, years, mean (SD)	70.6 (5.0)	71.2 (5.6)	70.9 (5.3)	0.290
≤69, n (%)	79 (42.9)	76 (41.1)	155 (42.0)	
70–79, n (%)	97 (52.7)	93 (50.3)	190 (51.5)	
≥80, n (%)	8 (4.3)	16 (8.6)	24 (6.5)	
Gender				0.291
Male, n (%)	60 (32.6)	51 (27.6)	111 (30.1)	
Female, n (%)	124 (67.4)	134 (72.4)	258 (69.9)	
SBP, mmHg (mean (SD))	141 (17)	140 (20)	141 (19)	0.688
DBP, mmHg (mean (SD))	79 (11)	79 (11)	79 (11)	0.909
BMI, kg/m^2 (mean (SD))	25.5 (3.2)	25.7 (3.3)	25.6 (3.2)	0.704
Education, years (mean (SD))	11.2 (4.2)	11.1 (4.4)	11.2 (4.3)	0.728
≤Middle school graduate, n (%)	68 (37.0)	70 (37.8)	138 (37.4)	
High school graduate, n (%)	54 (29.3)	50 (27.0)	104 (28.2)	
≥Some college, n (%)	62 (33.7)	65 (35.1)	127 (34.4)	
Living in U.S., years (mean (SD)	25.6 (10.5)	24.4 (11.5)	25.0 (11.0)	0.297

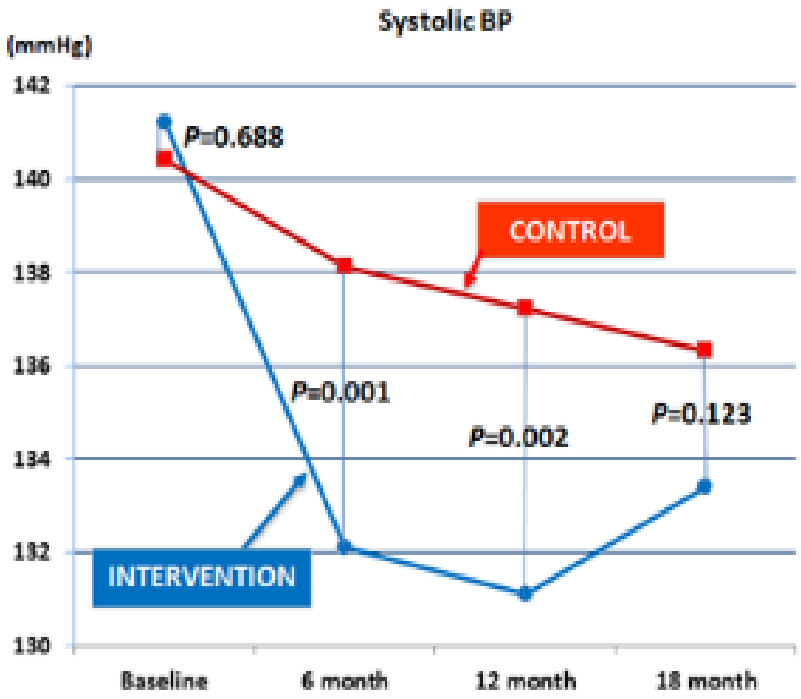
Results

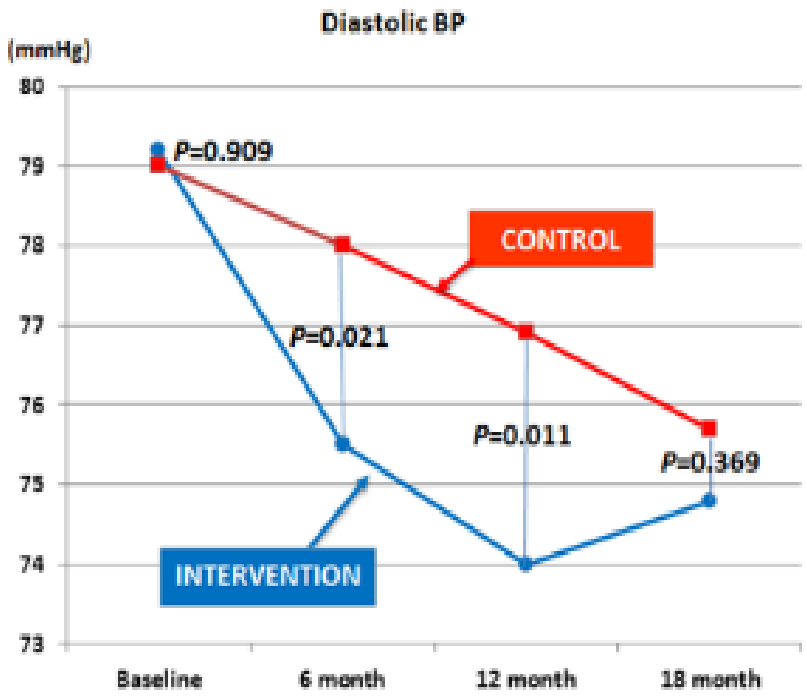
Diabetes Management

Demographics

Characteristics	Intervention Group (IG) (n=120)	Control Group (CG) (n = 130)	Total (n=250)	*p* (|IG|>|CG|)
Age, years (SD)	59.5 (8.38)	58.2 (8.47)	58.9 (8.44)	0.229
Male, n (%)	68 (56.7%)	74 (56.9%)	142 (56.8%)	0.999
Married, n (%)	110 (91.7%)	114 (87.7%)	224 (89.6%)	0.304
Family size, persons (SD)	3.0 (1.21)	3.0 (1.23)	3.0 (1.22)	0.642
Working: full/part time (%)	61 (51.3%)	87 (67.4%)	148 (59.7%)	0.010
Years in USA (SD)	24.2 (10.9)	23.3 (11.3)	23.7 (11.1)	0.491
Education, years (SD)	13.4 (3.08)	13.2 (3.36)	13.3 (3.22)	0.633
Housing own, n (%)	80 (66.7%)	80 (61.5%)	160 (64.0%)	0.913
Comfortable living/OK, n (%)	79 (66.4%)	90 (69.8%)	169 (68.1%)	0.588
Monthly income, $ (SD)	$3,702 ($3,177)	$4,735 ($9,527)	$4,269 ($7,379)	0.311
No health insurance, n (%)	52 (43.3%)	67 (51.5%)	119 (47.6%)	0.207
Have a primary doctor, n (%)				
Not have one	35 (29.2%)	37 (29.2%)	72 (28.8%)	
Korean speaking doctor	72 (60.0%)	78 (60.0%)	150 (60.0%)	0.981
Non-Korean speaking doctor	13 (10.8%)	15 (11.5%)	28 (11.2%)	

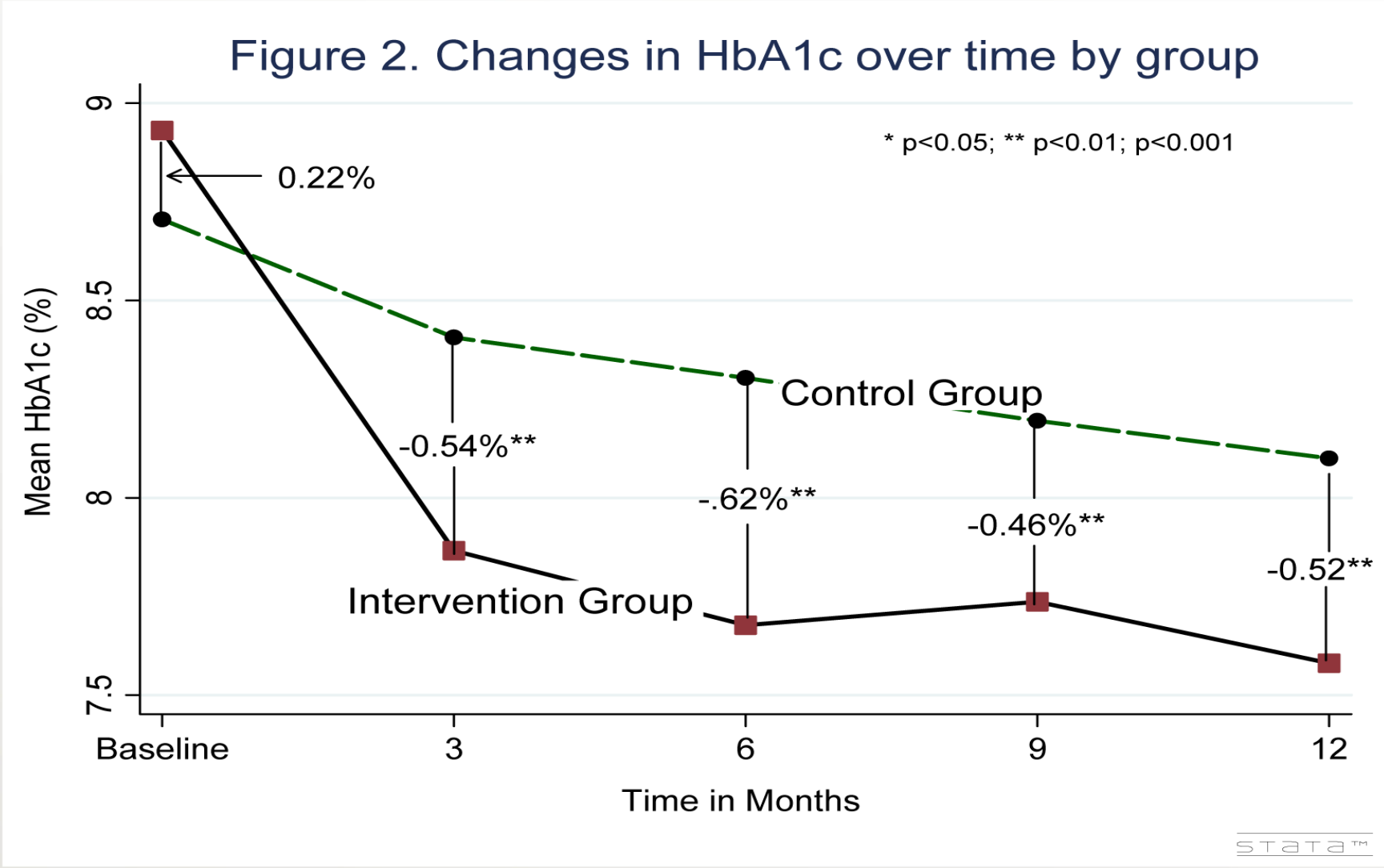
Results: Primary Outcome (HBP)

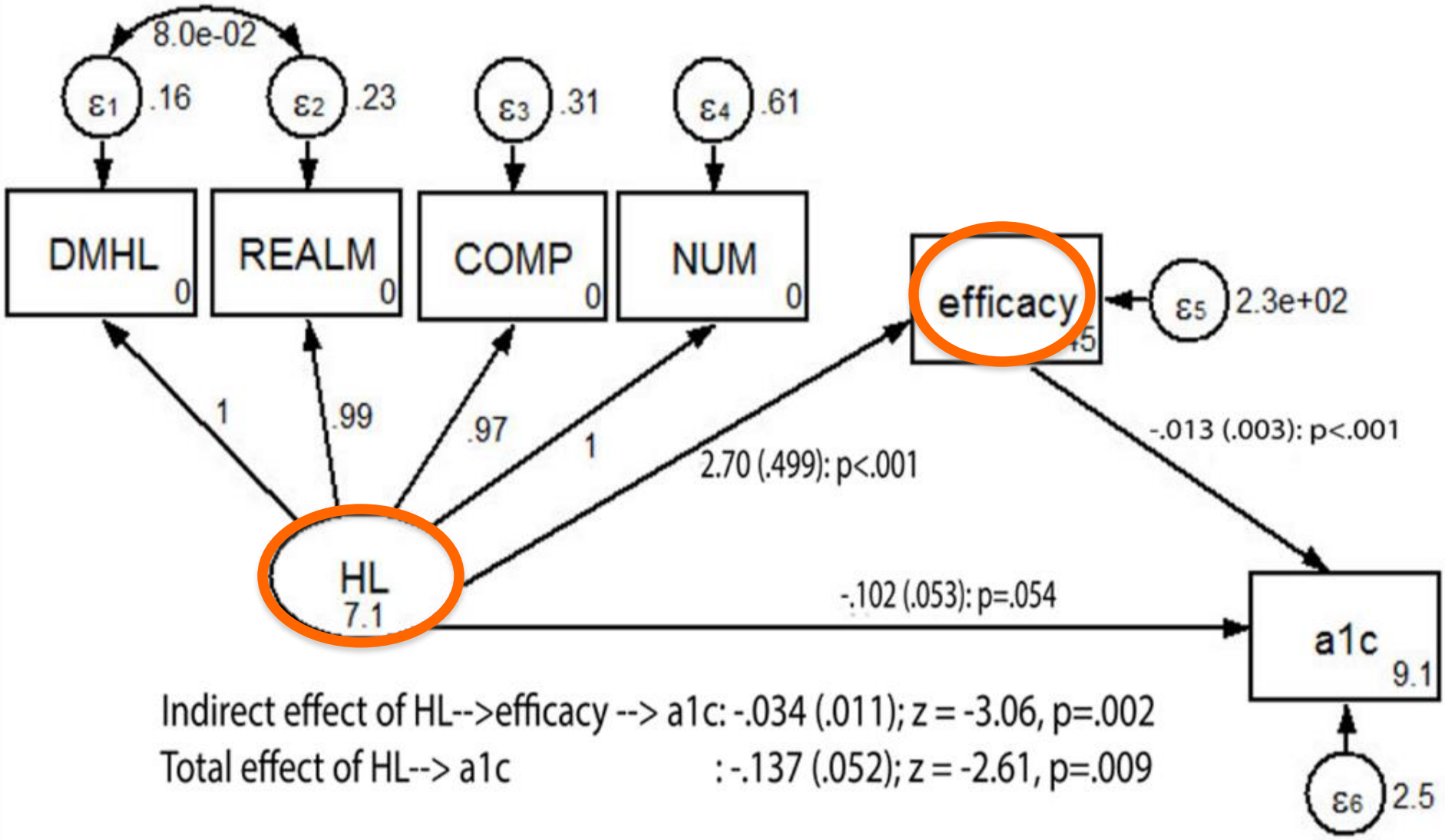




	Baseline		6 month		12 month		18 month	
	Intervention	Control	Intervention	Control	Intervention	Control	Intervention	Control
Controlled BP, n (%)	91 (49.5%)	80 (43.2%)	107 (58.5%)	78 (42.2%)	125 (67.9%)	96 (52.5%)	100 (54.3%)	98 (53.0%)
p	0.231		0.002		0.003		0.835	

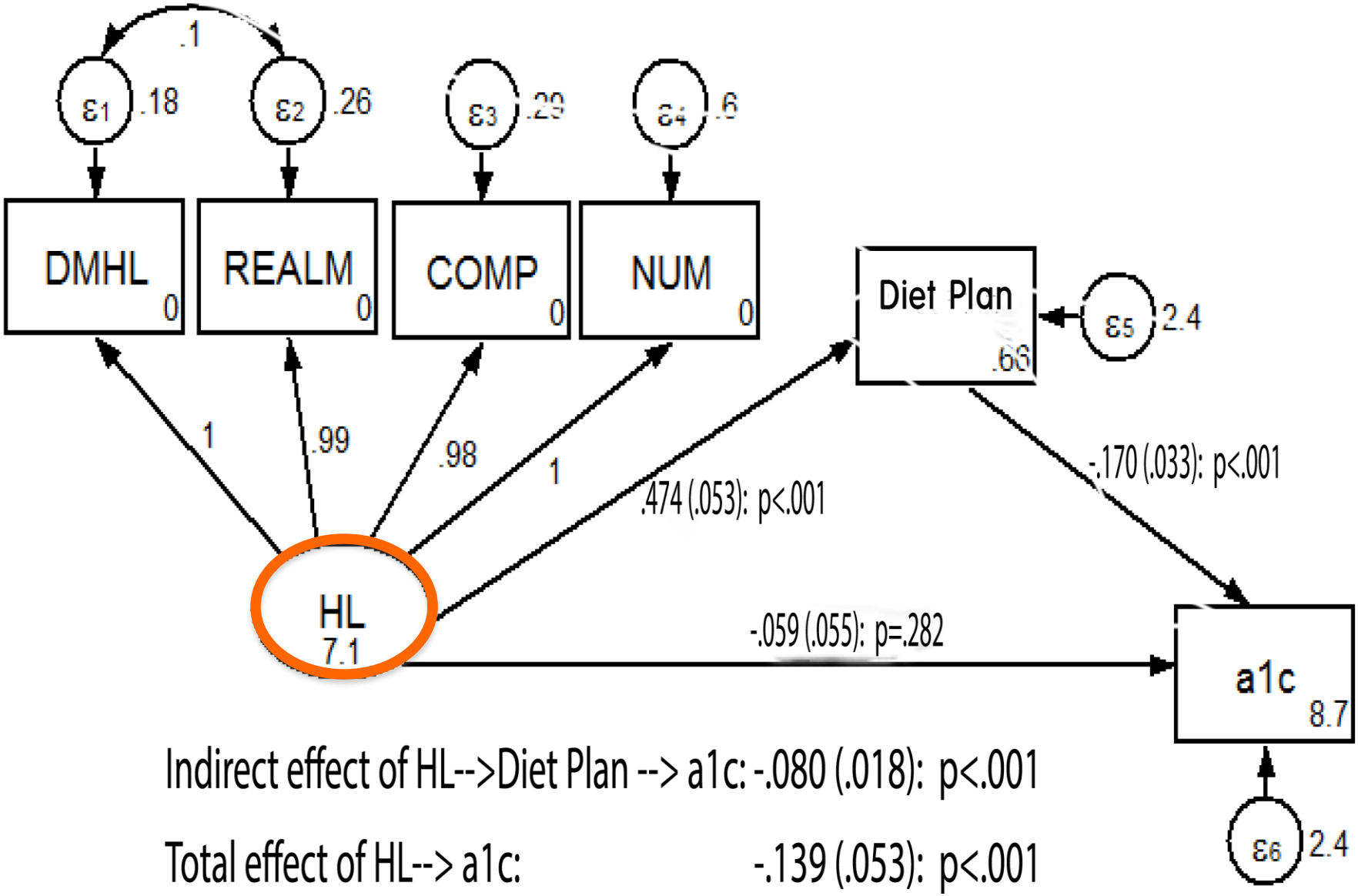
Results: Primary Outcome (DM)





Indirect effect of HL-->efficacy --> a1c: -.034 (.011); z = -3.06, p=.002

Total effect of HL--> a1c : -.137 (.052); z = -2.61, p=.009



Indirect effect of HL-->Diet Plan --> a1c: -.080 (.018): p<.001

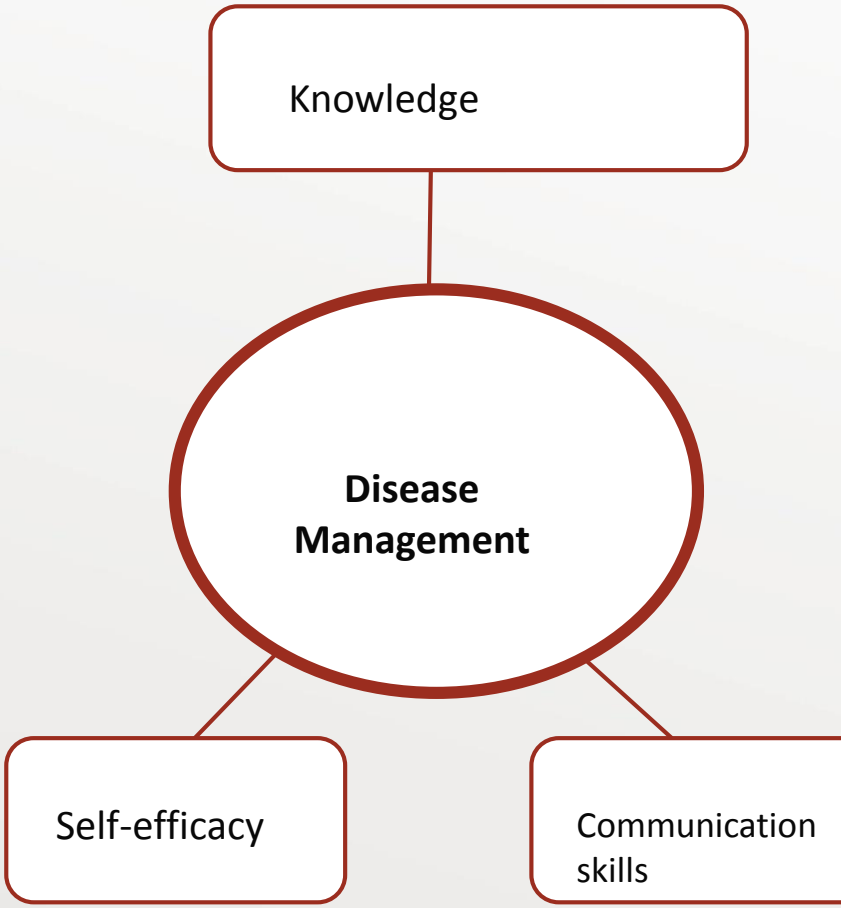
Total effect of HL--> a1c: -.139 (.053): p<.001

Summary

Effect of our HL interventions

- HL intervention, which designed to specifically change health literacy level, can produce the desire outcomes (proximal and distal outcomes) in chronic disease management

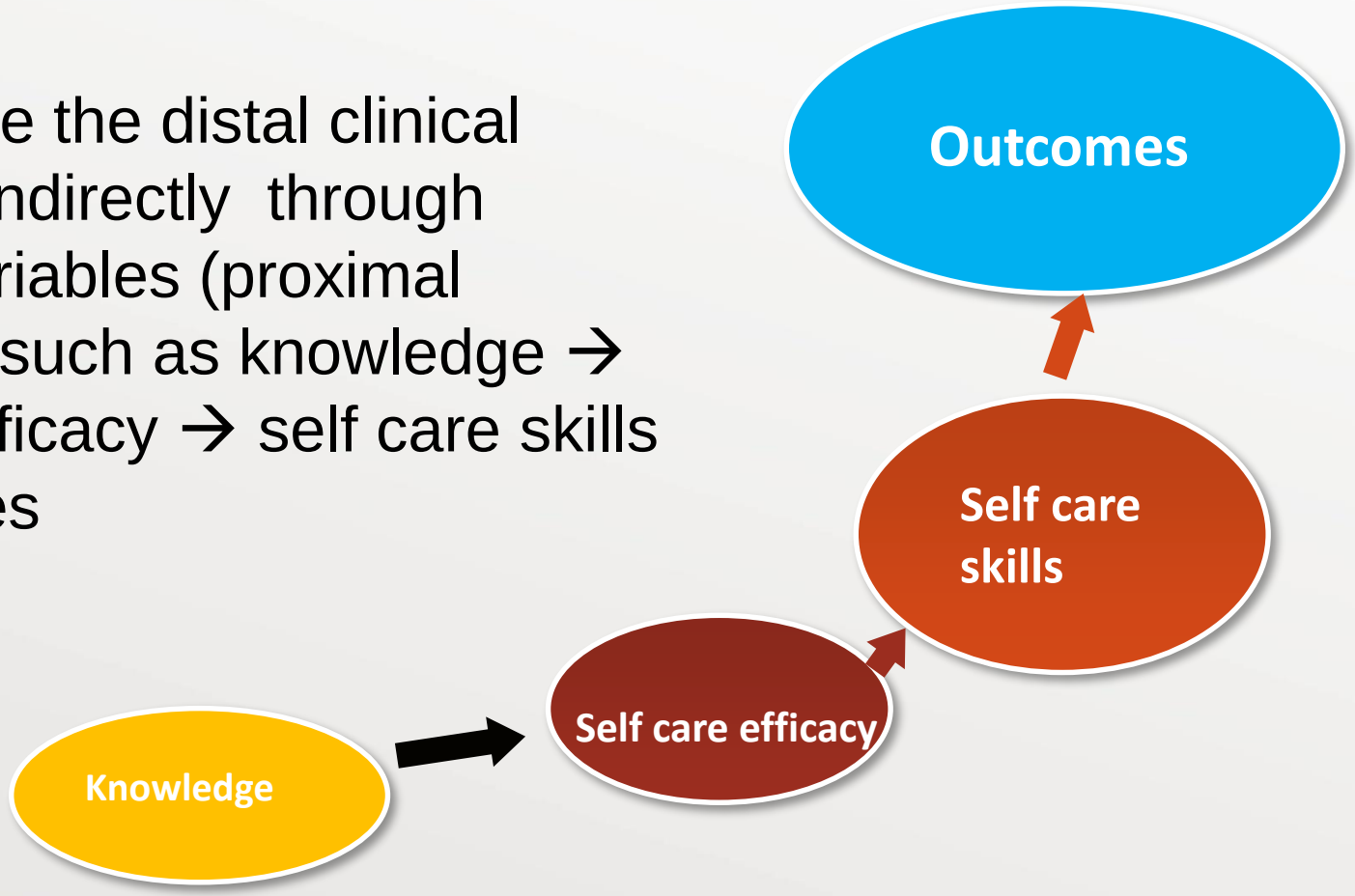
- It is not only to improves knowledge, but also to improve self-efficacy as well as communication skills- all of which are necessary for individuals, particularly the most vulnerable, to effectively manage their disease.



Role of HL in self –care

Conclusion

- HL influence the distal clinical outcomes indirectly through process variables (proximal outcomes) such as knowledge → self care efficacy → self care skills → outcomes



Implications

Future direction

- Findings suggest that health literacy serves as a missing link between individual characteristics, known psychosocial variables, and chronic disease management, especially for individuals with limited English skills such as KAIs.

- Interventions that influence HL directly are fruitful strategy to improve self-management skills and outcomes for people with chronic diseases.

Thank You!

mkim@nursing.utexas.edu