

DEPRESSION AND HEALTH LITERACY OVER THE LIFESPAN

Tetine Sentell, University of Hawai'i
Jennifer Manganello, University at Albany
Alessio Farcomeni, University of Rome
Yan Yan Wu, University of Hawai'i

HARC 2014
November 3, 2014



Office of Public Health Studies

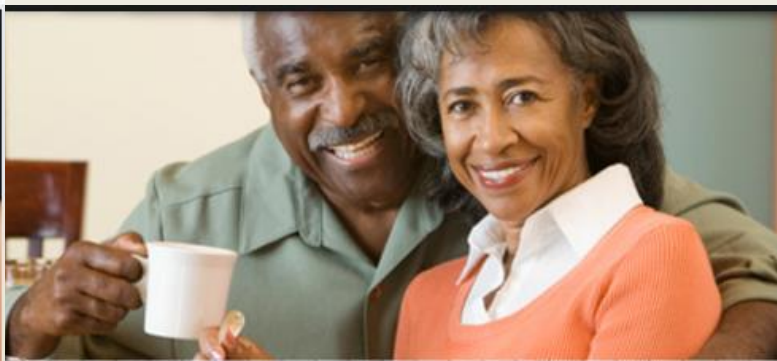
DEPRESSION

- Depression is a common psychiatric disorder in children, adolescents, adults, and the elderly.
- Depression is associated with higher risk of illness, unhealthy behavior, and interpersonal and psychosocial difficulties that can persist long after the depressive episode is over.



HEALTH LITERACY AND DEPRESSION

- Health literacy has been associated with depression in many studies.
- However the strength of evidence “low” (Berkman et al, 2011)
 - “Despite the general consistency of results, only 1 depression study rigorously controlled for potential confounders.”
- Studies in very specific populations.



HEALTH LITERACY OVER TIME

- Few studies have explored the relationship of health literacy to health status over the lifespan.
- Health literacy skills most relevant to adolescent health may vary from those most critical in young adulthood, middle adulthood, and older age.



PREVIOUS RESEARCH

- Previous study found that the relationship between self-reported health and domains related to low health literacy varied
 - Over domains
 - Over the lifespan
- Data was from adolescence to mid-adulthood
- What about depression over the lifespan?



STUDY GOAL

- Consider the relationship between depression and health literacy over the life course.



THREE DATA SETS

- 2012 Hawai'i BRFSS
- 2007 CHIS
- ADDHealth



2012 HAWAI'I BRFSS

- Behavioral Risk Factor Surveillance System (BRFSS) is the world's largest ongoing telephone survey of adults.
- The BRFSS is coordinated by the Centers for Disease Control and Prevention (CDC).
- 2012 Hawai'i BRFSS
 - N= 7,582

BRFSS: VARIABLES

■ Low health literacy

- How confident are you filling out medical forms? Not at all, a little bit, somewhat, quite a bit, extremely
 - 19.2%

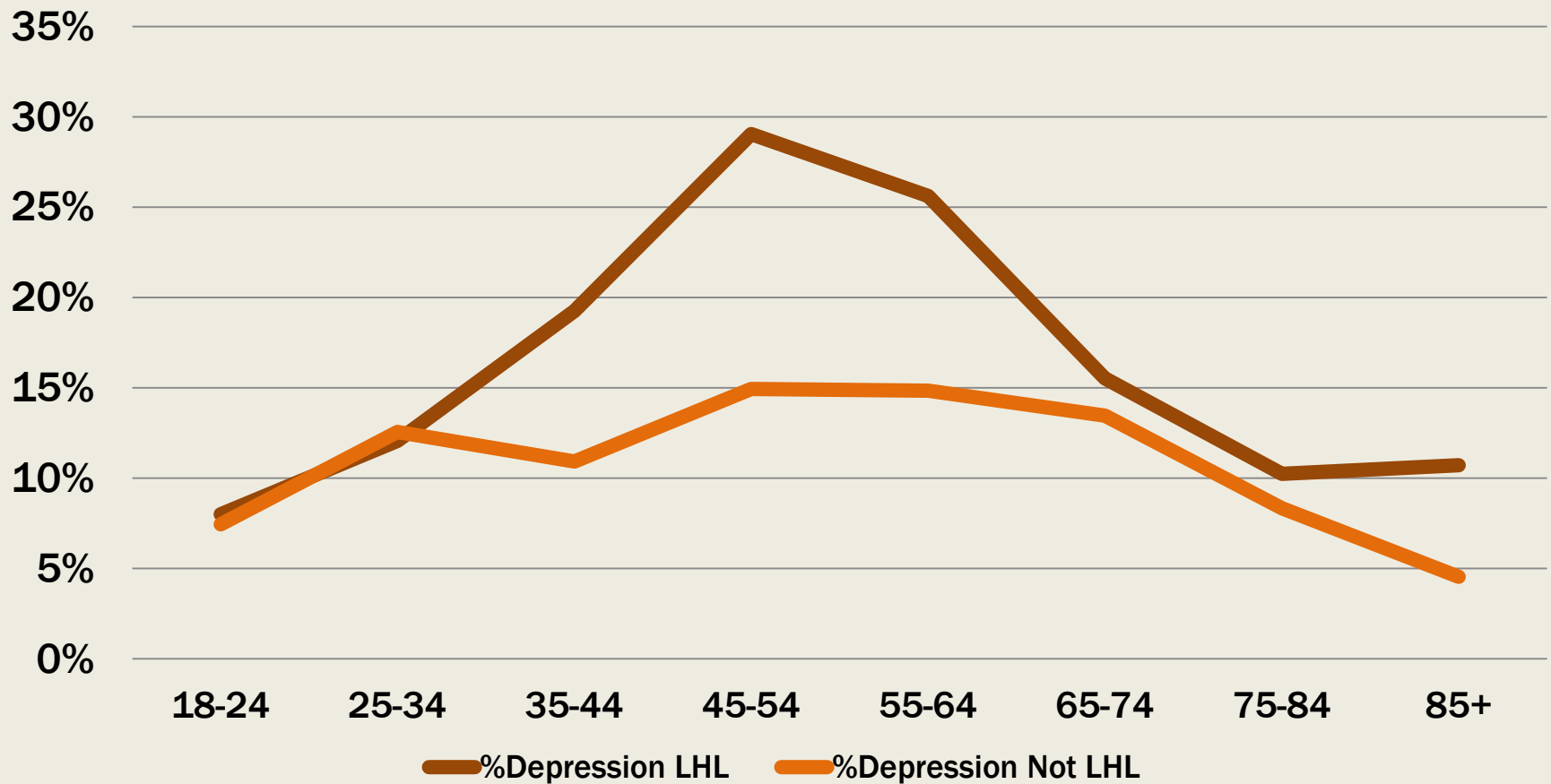
■ Depression

- Were you ever told you had a depressive disorder?
 - 13.1%

■ Age Groups

- 18-24, 25-34, 35-45...75-84, 85+

% DEPRESSION BY AGE GROUP AND HEALTH LITERACY



MULTIVARIABLE MODELS

	OR	L	U	p-value
Low Health Literacy	1.65	1.35	2.01	<0.001
Age Group				
18-24	REF	REF	REF	REF
25-34	2.60	1.69	3.99	<0.001
35-44	2.91	1.90	4.47	<0.001
45-54	4.02	2.66	6.07	<0.001
55-64	3.63	2.42	5.46	<0.001
65-74	2.77	1.81	4.23	<0.001
75-84	1.49	0.91	2.42	0.111
85+	1.09	0.52	2.28	0.823

Adjusting for gender, marital status, insurance, education, income, race, island, contextual factors by zip (family poverty, individual poverty, education)

Interaction Age*HL were not significant!

2007 CHIS

- California Health Interview Survey (CHIS)
- Population-based sample of California adults
- Questions in multiple languages.
- 2007 CHIS
 - N= 51,048

2007 CHIS

■ Low health literacy

- When you get written information at a doctor's office, would you say that it is very easy, somewhat easy, somewhat difficult, or very difficult to understand?
- When you read the instructions on a prescription bottle, would you say that it is very easy, somewhat easy, somewhat difficult, or very difficult to understand?
 - 18.2% (vs. 19.2 in BRFSS)

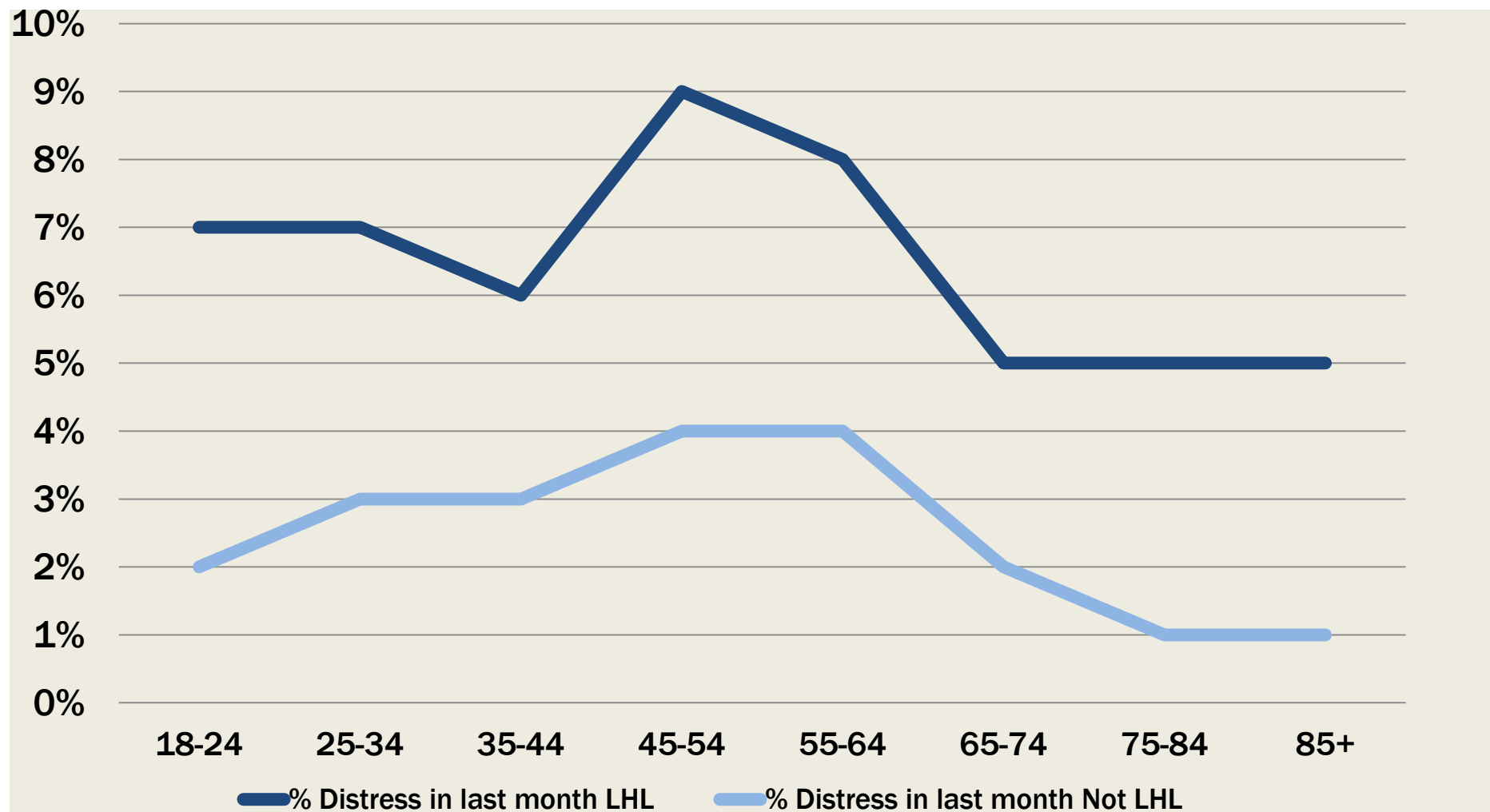
■ Mental Health

- “Had psychological distress past month”
 - 3.8% (vs. 13.1 in BRFSS for depression)

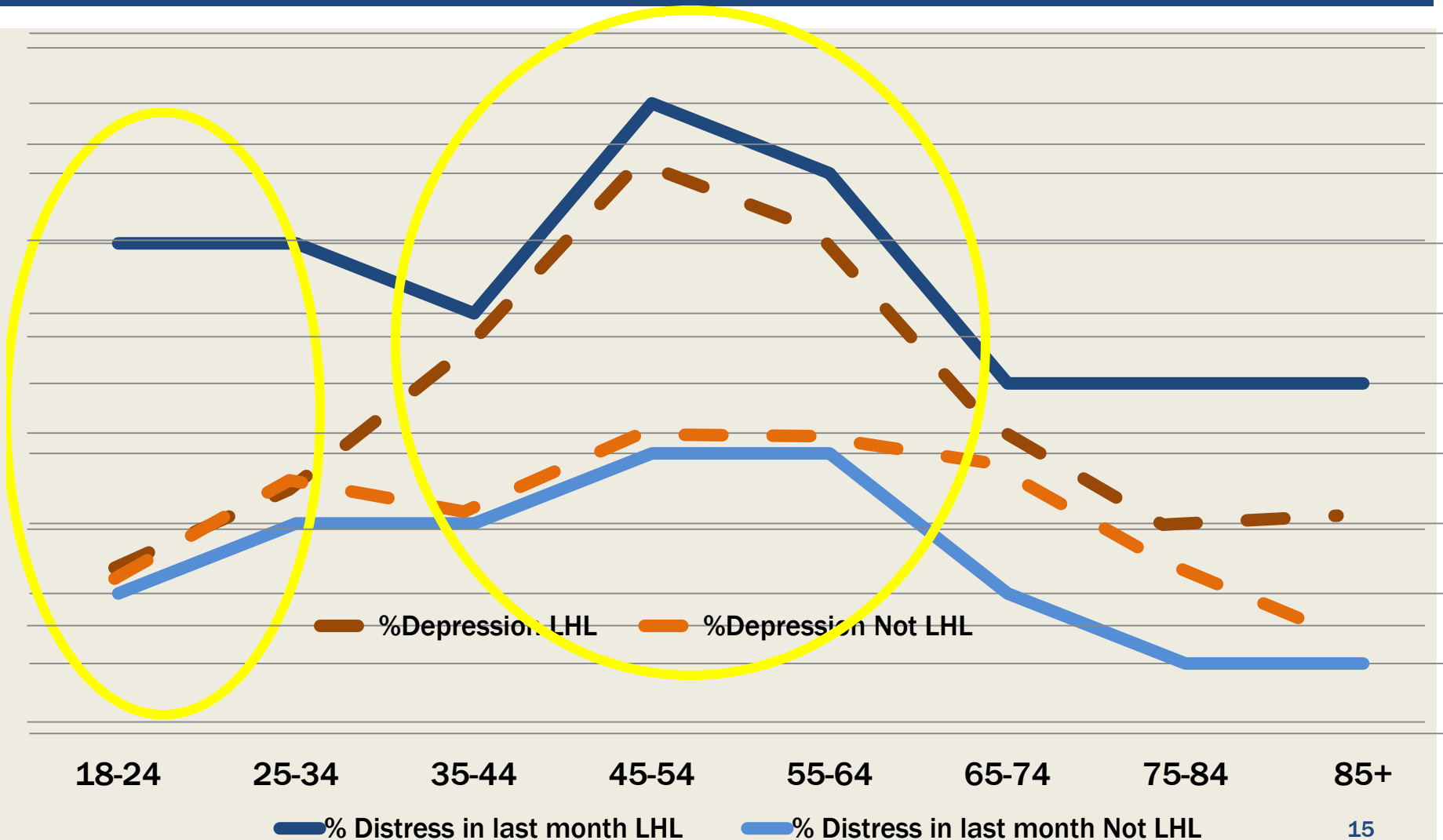
■ Age Groups

- 18-24, 25-34, 35-45...75-84, 85+

% DISTRESS BY AGE GROUP AND HEALTH LITERACY



% DISTRESS BY AGE GROUP AND HEALTH LITERACY



MULTIVARIABLE MODELS

	OR	L	U	p-value
Low Health Literacy	2.42	1.21	4.82	0.013
Age Group				
18-24	REF	REF	REF	REF
25-34	1.93	1.16	3.22	0.012
35-44	2.30	1.44	3.66	0.001
45-54	2.66	1.78	3.97	<0.001
55-64	2.60	1.66	4.07	<0.001
65-74	1.19	0.71	2.00	0.506
75-84	0.77	0.51	1.18	0.229
85+	0.53	0.30	0.93	0.028

Adjusting for gender, marital status, insurance, education, income, race, rural, born in the US.

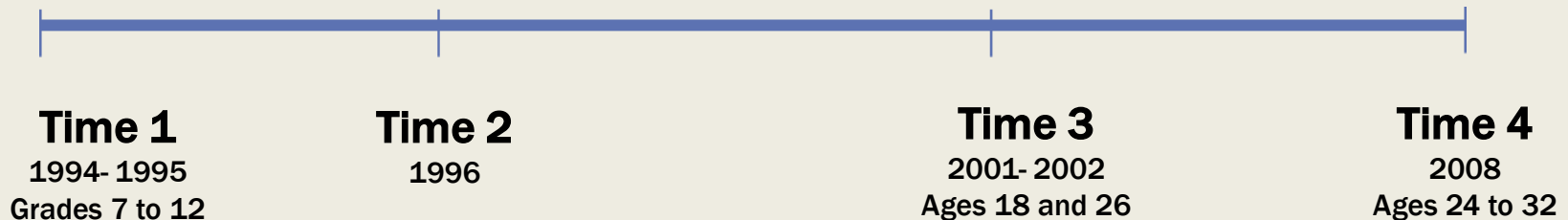
Interaction Age*HL were not significant!

LIMITATIONS

- **Dataset specific limitations**
 - States
 - Variables not available
- **Cohort effects?**
- **Only one health literacy measure**

ADDHEALTH

- National Longitudinal Study of Adolescent Health (AddHealth) data from four time intervals across 20 years.
 - From adolescence to mid-adulthood
 - N=3,333



DOMAINS

- Vocabulary
- Math
- Health information learned in school

“HEALTH LITERACY” DOMAIN VARIABLES

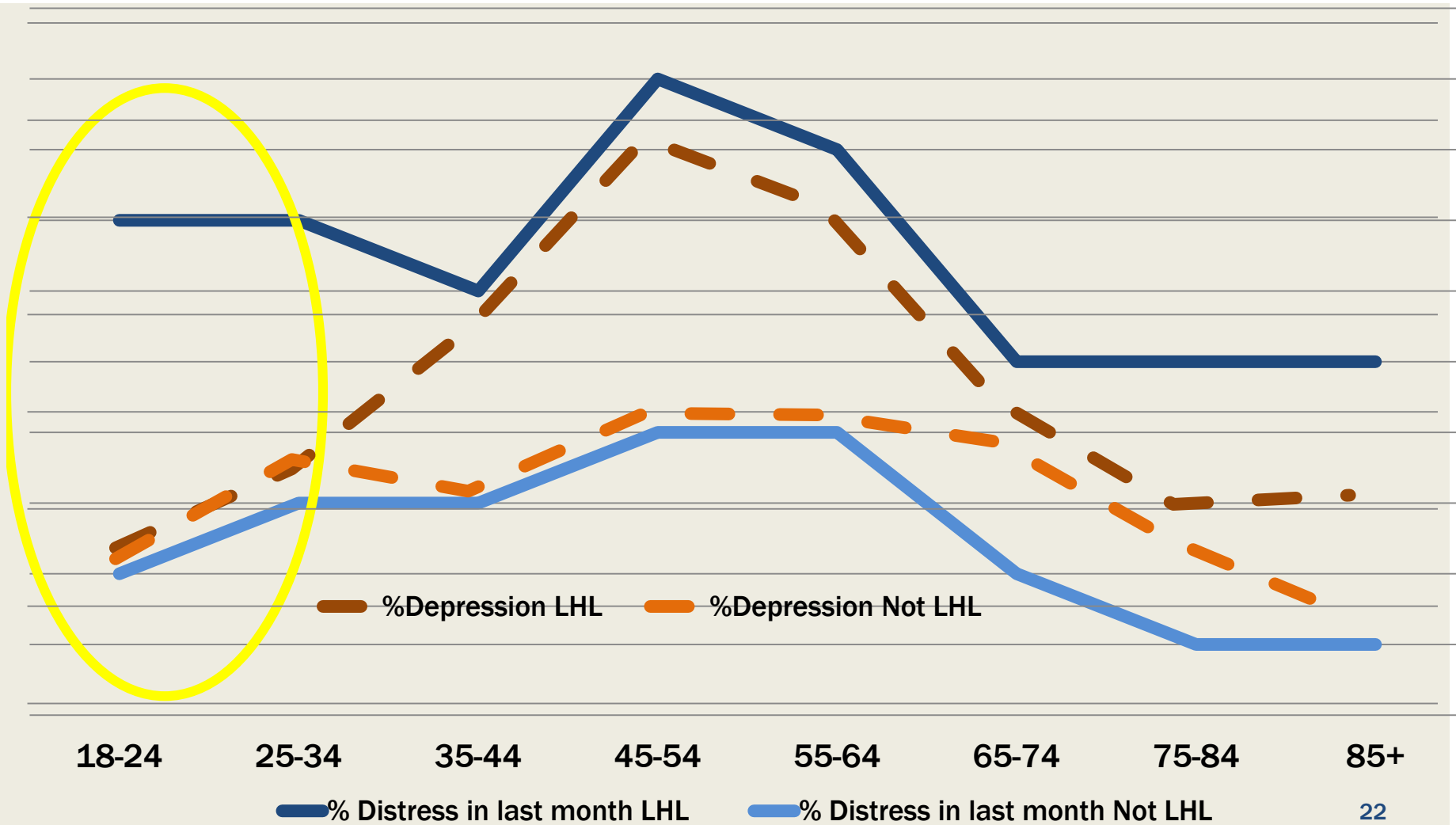
- All obtained from the first time interval
 - Subjects were in grades 7-12.
- Vocabulary was measured by the AddHealth Peabody Picture Vocabulary Test
 - Low vs not low vocabulary
- Math skills were measured from math grades in school
 - High vs. not high
- Health information was measured as a continuous variable created from 17 items regarding whether the topic had been covered in school.
 - Continuous in models
 - Dichotomized in descriptive statistics

DEPRESSION

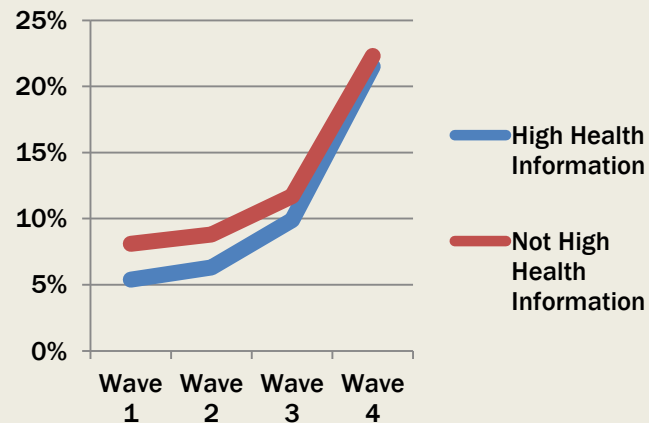
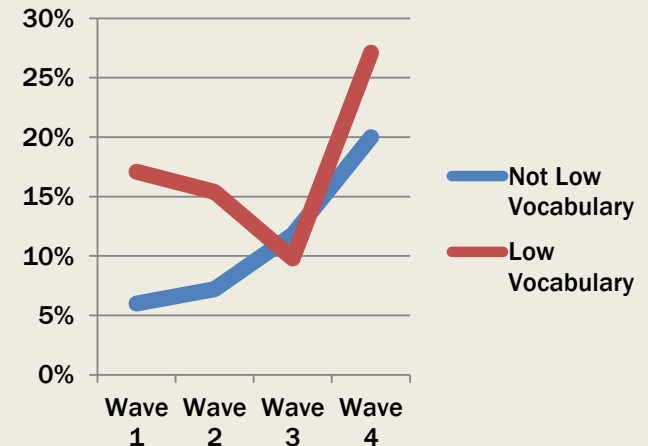
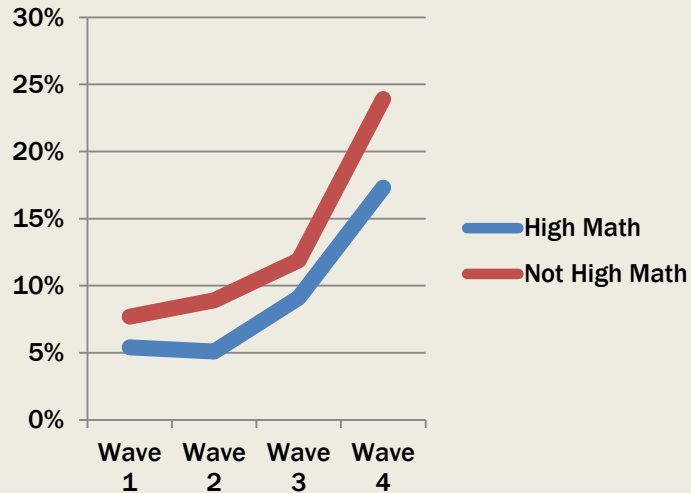
■ Depression

- Measured by the CES-D (0-60)
- Gender specific cut points
- Measured at four time intervals

% DISTRESS BY AGE GROUP AND HEALTH LITERACY



HEALTH LITERACY DOMAINS



MULTIVARIABLE MODELS

	OR	L	U	p-value
Not Low Vocabulary	0.638	0.454	0.896	0.0095
Health Information	0.975	1.116	2.203	0.0563
High Numeracy	0.663	0.950	1.001	0.0001
Wave				
Wave 1	ref		ref	ref
Wave 2	1.209	0.959	1.519	0.1090
Wave 3	2.045	1.652	2.531	<0.0001
Wave 4	5.617	4.614	6.838	<0.0001

Adjusting for education, race, access to care, English household. Gender specific-cut points.

RESULTS

- Math and vocabulary (and, marginally, health info in school) were significantly associated with depression across the whole time period.
- Health information is strongest at waves 1 and 2 and then mitigates to a null effect in later waves.

LIMITATIONS

- **Challenges in measurement**
 - Not standard health literacy measures
 - Other domains in health literacy
 - Health literacy measures only in Time 1
- **Points in time**
 - Varied ages
 - Different life events

CONCLUSIONS

- Health literacy variation over lifespan
 - May help explain differences across studies
- Further research!



ACKNOWLEDGEMENTS

This research uses data from Add Health, a program project directed by Kathleen Mullan Harris and designed by J. Richard Udry, Peter S. Bearman, and Kathleen Mullan Harris at the University of North Carolina at Chapel Hill, and funded by grant P01-HD31921 from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, with cooperative funding from 23 other federal agencies and foundations. Special acknowledgment is due Ronald R. Rindfuss and Barbara Entwisle for assistance in the original design. Information on how to obtain the Add Health data files is available on the Add Health website (<http://www.cpc.unc.edu/addhealth>). No direct support was received from grant P01-HD31921 for this analysis.

THANK YOU! MAHALO!

