The prevalence and distribution of poor health literacy in a regional South Australian community : use of the short Test of Functional Health Literacy in Adults (s-TOFHLA).

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Healthy People 2010
defines Health Literacy as

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

US Dept. of Health and Human Services 2000

Model of Health Literacy

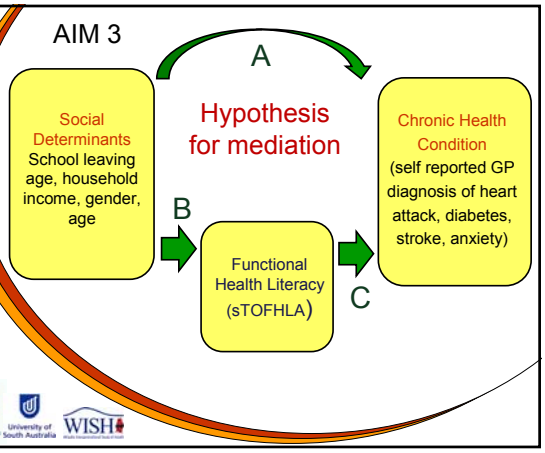
		Individual Benefits
Functional HL: Communication of information	Transmission of factual information on health risks and health services utilization	Improved knowledge of risks and health services, compliance with prescribed actions
Interactive HL: Development of personal skills	+ opportunities to develop skills in a supportive environment	Improved capacity to act independently on knowledge, improved motivation and self-confidence
Critical HL: Personal and community empowerment	+ provision of info on social determinants of health, and opportunities to achieve policy and/or organisational change	Improved individual resilience to social and economic adversity

Nutbeam 2000

Aims

1. To measure and categorise Functional Health Literacy in a regional Australian cohort
2. To examine the associations of inadequate/marginal FHL with social determinants of health.
3. To examine the mediating affect of FHL on the association of education with the presence of major chronic conditions in a regional community.

AIM 3



Method

- Observational, cross-sectional sub-study nested within a population-sampled health study (WISH)
- 735 participants aged over 18yo randomly selected for the WISH study.
- Screened with validated Health Literacy tool – s-TOFHLA

You must have an _____stomach when you come for ____.

a. asthma	a. is.
b. empty	b. am.
c. incest	c. if.
d. anaemia	d. it.

Score for Health Literacy
23-36 – adequate
17-22 – marginal
0-16 – inadequate

Marginal + inadequate = poor Health Literacy

Missing Data -50

Excluded	4
Refused	1
Unable to contact	28
On Holidays	3
Left town	7
Failed Appointments	4
Deceased	3

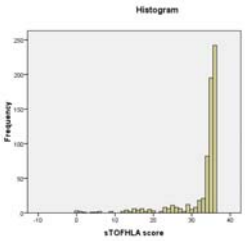
Exclusion Criteria
- visually impaired,
- unable to read English (ESL)
- other eg cognitive impairment

Ethics approval from
UniSA Human Research Ethics Committee.
Consideration giving to the embarrassment this screening could cause participants.

Aim1&2
Prevalence & Distribution of Health Literacy

Adequate	624	92.9%
Marginal	18	2.7%
Inadequate	30	4.5%
	672	
Marginal + inadequate=poor	48	7.1%

Ceiling Effect



Percentiles

5	25	50	75	95
17	34	35	36	36

SPSS 17

Inadequate/marginal HL= 48
Prevalence =7.1%

		n	Poor	Adequate
Age	> 50 years	339	81.3%	48.1%
Gender	male	279	54.2%	40.5%
Income	≤ $40,000	261	68.8%	36.7%
Employment	Unemployed	23	0	3.7%
Level of Education	Completed high school +	424	64.6%	63.3%
Age leaving school	≤ 15years	246	65.3%	35.4%

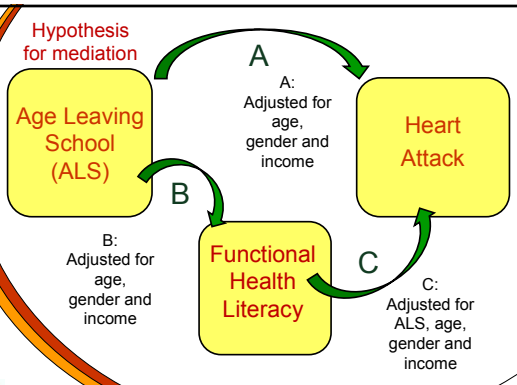
Self-reported GP diagnosed (n)	Poor	Adequate	Unadjusted	
			OR (95%CI)	P
Heart Attack (25)	12.5%	3.1%	4.5 (1.7-11.9)	.002
Diabetes (57)	12.5%	8.5%	1.5 (.62-3.7)	.35
Stroke (18)	12.5%	1.5%	7.2 (2.5-20.3)	.001
Anxiety (54)	12.5%	7.7%	1.7 (.57-6.9)	.25

Aim 3 – the mediating effect of Health Literacy

Variables

	Categories
Health Literacy	-adequate - inadequate/marginal
Gender	-female -male
Income	- >$80,000 - $40,000-$80,000 - <$40,000
Age Leaving School	-17 years + -16 years -15 years -<15 years
Age	Continuous
Conditions	- Yes - No

Hypothesis for mediation



A: Adjusted for age, gender and income

B: Adjusted for age, gender and income

C: Adjusted for ALS, age, gender and income

Path A
Effect of Age Leaving School (ALS) on history of Heart Attack

Then this is adjusted for
- age, gender, income individually
- all covariates (age, gender and income) together

Heart Attack	OR	95% Confidence Interval		P
		Lower	Upper	
ALS (<15 years)	15.82	4.34	57.68	.001
Adjusted for age	4.08	.96	17.4	.057
gender	15.08	4.11	55.38	.001
income	15.94	4.35	58.36	.001
all covariates	3.66	.839	16.05	.08

Path B

Effect of Age Leaving School (ALS) on Health Literacy

Health Literacy	OR	95% Confidence Interval		P
		Lower	Upper	
ALS (<15 years)	13.55	5.5	33.43	.001
Adjusted for age	3.68	1.32	10.33	.013
all covariates (age, sex, income)	2.66	.93	7.63	.068

Path C

Effect of Health Literacy on history of Heart Attack

Heart Attack	OR	95% Confidence Interval		P
		Lower	Upper	
Health Literacy	4.53	1.72	11.94	.002
Adjusted for ALS	2.01	.69	5.87	.2
age	1.53	.52	4.47	.438
all covariates (age, sex, income, ALS)	1.15	.39	3.4	.8

Heart Attack	OR	95% Confidence Interval		P
		Lower	Upper	
A. Age Leaving School <15	3.66	.839	16.05	.08
C. inc. Health Literacy	3.64	.830	15.96	.08
Stroke				
A. Age Leaving School <15	2.9	.475	17.75	.25
C. inc. Health Literacy	2.5	.408	15.85	.32
Diabetes				
A. Age Leaving School <15	1.32	.545	3.22	.534
C. inc. Health Literacy	1.41	.577	3.45	.450

There is little difference in the Odds ratios once Health Literacy is included.

The hypothesis that health literacy mediates the relationship between education and the health conditions studied is rejected.

Findings limited/affected by

- Low numbers of poor HL – 7.1%
  - Population recruited
  - Difference in health systems
  - Ceiling effect/sensitivity of sTOFHLA
    - Victorian study – 6.8% (Barber, 2009)
  - Level of HL measured
    - Australian Literacy and Life Skills Survey – 59%
  - Self- reported data
  - Age

Conclusion

- Older, less educated and less financially secure adults were more likely to have inadequate/marginal FHL.
- Inadequate/marginal FHL was associated with heart attack and stroke, however it did not mediate the association between socio-demographic characteristic of education and the likelihood of a chronic condition.
- These findings may be limited by the low proportion of the sample with inadequate/marginal levels of FHL, which may reflect a low sensitivity of the sTOFHLA and a ceiling effect in this population.