Does Unequal Income Translate into Unequal Knowledge?

The Knowledge Gap and Cancer Health Disparities

Does Unequal Income Translate into Unequal Knowledge?

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The burden of cancer is borne unequally

- SES is strongly associated with prevalence and mortality of cancer
- Risk factors --such as tobacco use, obesity and infections-- are more prevalent in lower SES groups
- Protective behaviors –such as regular screening and sun protection– are more prevalent in higher SES groups

WHY?

Knowledge gap is one hypothesis

The Knowledge Gap Hypothesis

- Differences in knowledge results from socio-economic-based inequalities.
- Persons with higher SES groups tend to acquire information at a faster rate than lower SES groups.
- Thus the gap between information rich and information poor grows.

How do income & education affect the knowledge gap?

- We hypothesize that people from high SES groups know more than those from lower SES groups
- We expect that respondents with low income and high education will do better than persons with high income and low education

Analysis Plan

- Analyze household income and individual educational attainment
- Focus on indicators for which scientific evidence for cancer cause is strong
  - smoking and sun exposure

Defining SES

- Educational attainment and income
  - High = GE$50K & GT HS grad
  - Medium 1 = LT$50K & GT HS grad
  - Medium 2 = GE$50K & LT HS grad
  - Low = LT$50K & LT HS grad

Knowledge Outcomes

- Q: Which causes the most deaths each year in the US?
  - R: Cigarettes vs other response
- Q: Smoking increases your chance of getting cancer?
  - R: A lot vs other response
- Q: Sun exposure increases your chance of getting cancer?
  - R: A lot vs other response

Logistic Regression Model

- Age (18-44, 45-64, 65+)
- Race/ethnicity (Hispanic, NH White, NH Black, Other)
- Health insurance (yes, no)
- Confident you'd find info you need (very vs. somewhat or less)
- Saw a doc in past 12 mos (yes, no)
- Doesn't pay attention to medical info (6 different media sources)
- Income and education

Table 1: Likelihood of response that cigarettes are the primary cause of death

Predicted margins for significant results only

	Unweighted n	Predicted margins (95% CI)
Age		
18-44	2656	44.1 (41.9 - 46.4)
45-64	1861	39.0 (35.8 - 42.1)
65+	995	32.9 (29.1 - 36.6)
Number of "not at all" responses to pay attention to information about health topics		
0	1531	42.8 (39.7 - 45.9)
1	1788	42.6 (39.3 - 45.8)
2	1092	39.4 (36.1 - 42.7)
3	633	35.7 (30.6 - 40.8)
4	314	41.6 (34.1 - 49.0)
5	154	29.8 (22.5 - 37.2)
Household income and educational attainment		
>= $50,000 and > HS grad	1711	44.4 (41.9 - 47.0)
< $50,000 and > HS grad	1538	40.3 (37.3 - 43.4)
>= $50,000 and <= HS grad	424	43.3 (36.8 - 49.9)
< $50,000 and <= HS grad	1839	37.2 (33.5 - 41.0)

Source 2003 Health Information National Trends Survey

Table 2: Likelihood of response that smoking increases chances of getting cancer “a lot”

Predicted margins for significant results only

	Unweighted n	Predicted margins
Do you have any kind of health coverage?		
Yes	2395	86.1 (83.9 - 88.3)
No	368	79.6 (73.7 - 85.5)
Number of "not at all" responses to pay attention to information about health topics		
0	771	90.8 (88.2 - 93.5)
1	875	86.3 (83.5 - 89.1)
2	552	83.3 (79.0 - 87.5)
3	305	80.2 (73.4 - 87.0)
4	168	76.8 (69.0 - 84.7)
5	92	81.6 (71.7 - 91.4)
Household income and educational attainment		
>= $50,000 and > HS grad	860	88.3 (85.2 - 91.5)
< $50,000 and > HS grad	757	87.2 (84.4 - 90.0)
>= $50,000 and <= HS grad	214	86.5 (81.5 - 91.4)
< $50,000 and <= HS grad	932	81.6 (78.0 - 85.3)

Source 2003 Health Information National Trends Survey

Table 3: Likelihood of response that sun exposure increases chances of getting cancer "a lot"

Predicted margins for significant results only

	Unweighted n	Predicted margins
Race/ethnicity		
Hispanic	338	67.6 (62.3 - 72.8)
Non-Hispanic white	1892	68.8 (65.7 - 71.9)
Non-Hispanic black or African American	330	44.8 (38.3 - 51.4)
Non-Hispanic (other or multiple)	148	46.7 (35.4 - 58.0)
Ref/NA/DK/Missing	29	53.7 (24.8 - 82.6)
Saw a doctor or other health care professional in the past 12 months		
Yes	2342	66.2 (63.7 - 68.8)
No	395	56.4 (50.3 - 62.5)
Household income and educational attainment		
>= $50,000 and > HS grad	850	71.1 (67.3 - 74.8)
< $50,000 and > HS grad	779	67.1 (62.9 - 71.4)
>= $50,000 and <= HS grad	210	59.5 (51.7 - 67.4)
< $50,000 and <= HS grad	898	59.4 (54.2 - 64.7)

Source 2003 Health Information National Trends Survey

Summary of Findings

- Household income and educational attainment were consistent strong predictors of a knowledge gap for the outcomes studied
  - Results were in the expected directions for the 2 extremes
  - However, education didn't compensate more than income, as we anticipated….
  - having high income (and low education) was similar to having high education (and low income)
  - High income and low education seems more difficult to achieve. Fewer people had high income and low education (n=424) than low income and high education (n=1538)