The Digital Divide: The Implications of Unequal Access to Internet and New Media to Public and Individual Health

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Why should class and poverty matter?
Children living in poverty are how many times more likely to have poor health, compared with children living in high-income households?

A. 3 times
B. 4 times
C. 5 times
D. 7 times
Children are most vulnerable. Not only are they susceptible to sub-standard housing, poor food, bad schools, unsafe streets and chronic stress, but the impacts of childhood poverty are cumulative, leading to a pile-up of risk that influences adult health and can even affect the next generation.
On average, how many more supermarkets are there in predominantly white neighborhoods compared to predominantly Black and Latino neighborhoods?

A. About the same
B. 2 times as many
C. 4 times as many
D. 6 times as many
ANSWER: C. 4 times

Predominantly Black and Latino neighborhoods have more fast-food franchises and liquor stores, yet often lack stores that offer fresh, affordable fruits and vegetables.
Why should class and poverty matter?

- Health is not about biology
- Biology and environment interact to influence health
- There is a differential disease burden among:
  - social classes
  - races and ethnicities
  - geographies
Obesity Trends

Reprinted from The Funny Times / PO Box 18530 / Cleveland Heights, OH 44118
phone: (216) 371-8600 / e-mail: ft@funnytimes.com
Obesity Trends — 1995

The map illustrates the obesity trends across the United States in 1995, categorizing states into four groups based on obesity prevalence:

- No Data
- <10%
- 10–14%
- 15–19%

States are colored to represent their obesity prevalence category.
Obesity Prevalence by Education Level 1991-2001

Source: CDC, BRFSS, 1991-2001
Cigarette Smoking by Education

![Graph showing percentage of smokers by education level over years.](image)
Why do these disparities exist?

• Social determinants:
  ▪ Social cohesion
  ▪ Social stratification
    » Social Class
    » Socioeconomic status (SES)
    » Socioeconomic position (SEP)
  ▪ Social networks
  ▪ Social capital
  ▪ Neighborhood and other area-based conditions
  ▪ Discrimination
  ▪ Social policies
  ▪ Communication Inequalities
Coffee as a Health Drink?
Studies Find Some Benefits

Study links caffeine to higher blood pressure

Coffee seen not to raise heart attack risk: study

One cup of coffee a day 'risky'

A cup of confusion: Is coffee healthy or not?
Mellisa Williamson, 35, a Bullitt Avenue resident, worries about the effect on her unborn child from the sound of jackhammers.
Challenges in the Information Age

**Challenge #1**

- More information does not necessarily mean more communication
“My desire to be well-informed is currently at odds with my desire to remain sane.”
Health Information National Trends Survey (HINTS)

- HINTS collects nationally representative data routinely about the American public's use of cancer-related information. The survey:
  - Provides updates on changing patterns, needs, and information opportunities in health
  - Identifies changing communications trends and practices
  - Assesses cancer information access and usage
  - Provides information about how cancer risks are perceived
  - Offers a testbed to researchers to test new theories in health communication
Survey Question:

- It seems like everything causes cancer.

Agree or disagree?

51% agree
Survey Question:

• There are so many recommendations about preventing cancer, it’s hard to know which to follow.

Agree or disagree?

77% agree
Survey Question:

• There’s not much people can do to lower their chances of getting cancer.

Agree or disagree?

72% disagree
Challenges in the Information Age

Challenge #2

- Information is always unequally distributed

- There exists a Communication Inequality among individual and groups where some people have better access to information, pay more attention to it, learn more from it and have the capacity to act on it.
Recent Work

• Race and ethnicity are associated with:
  - subscription to cable or satellite TV and the Internet
  - daily readership of newspapers
  - differential *time* with different media
  - *preferences* for different media
  - *attention* to health content in different media
  - processing (confusion) of health information
  - trust in media
  - *knowledge gaps* in health
  - intermittent Smoking
Bridging the Communication Gap: *The Internet*

- To examine the potential inequalities in communication, we need to identify main sources of information delivery.

- Internet has emerged as a major source of information in US:
  - In 2006, ~70% of adult population online (PEW, 2007)
  - In 2006, ~80% have searched for health information (Beckjord et al, 2007)
    - The number of health related websites exceeds tens of millions
Internet Access and Use

• Despite increasing penetration of the Internet and amount of online health information, there are significant differences in access and use of the Internet based on:

  ▪ individuals’ education level
  ▪ socioeconomic position (SEP)
  ▪ racial/ethnic group
“Do you use the internet, at least occasionally?”

“Do you send or receive email, at least occasionally?”

# Demographics of Internet Users

<table>
<thead>
<tr>
<th>Use the internet</th>
<th>74%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Race/ethnicity</strong></td>
<td></td>
</tr>
<tr>
<td>White, Non-Hispanic</td>
<td>77%</td>
</tr>
<tr>
<td>Black, Non-Hispanic</td>
<td>64</td>
</tr>
<tr>
<td>Hispanic**</td>
<td>58</td>
</tr>
<tr>
<td><strong>Household income</strong></td>
<td></td>
</tr>
<tr>
<td>Less than $30,000/yr</td>
<td>57%</td>
</tr>
<tr>
<td>$30,000-$49,999</td>
<td>77</td>
</tr>
<tr>
<td>$50,000-$74,999</td>
<td>90</td>
</tr>
<tr>
<td>$75,000 +</td>
<td>94</td>
</tr>
<tr>
<td><strong>Educational attainment</strong></td>
<td></td>
</tr>
<tr>
<td>Less than High School</td>
<td>35%</td>
</tr>
<tr>
<td>High School</td>
<td>67</td>
</tr>
<tr>
<td>Some College</td>
<td>85</td>
</tr>
<tr>
<td>College +</td>
<td>95</td>
</tr>
</tbody>
</table>
Broadband Disparities

- 25% of low-income Americans, those whose household incomes are $20,000 annually or less, report having broadband at home in 2008
  - down from the 28% in 2007

- 43% of African Americans reported home broadband compared with 57% and 56% of Whites and English-speaking Hispanics

Using the Internet for Health Purposes

Use of internet for health by education, 2005 HINTS

Prevalence of internet health use (%)

- Grade 5
- Grade 6-8
- H. S. graduate
- Trade school
- Some college
- Associate's
- Bachelor's
- Master's
- Prof. or PhD

Education
Noticing Health Information on the Internet

Noticing health information on the Internet by education, 2005 HINTS

Prevalence of noticing information (%)

Education

- ≤ Grade 5
- Grade 6 - 8
- Grade 9 - 12
- H. S. graduate
- Trade school
- Some college
- Associate’s
- Bachelor’s
- Master’s
- Prof. of PhD
Internet Use

Internet use by household income 2005 HINTS

Prevalence of internet use (%)

<100% FPL  100%- 300% FPL  ≥300% FPL

Household income (% of the Federal Poverty Level)
Using the Internet for Health Purposes

Use of internet for health by household income 2005
HINTS

Prevalence of internet health use (%)

Houshold income (% of the Federal Poverty Level)

<100% FPL  100%- 300% FPL  ≥300% FPL
Watching Health News on TV

Watching health news by household income, 2005
HINTS

Prevalence of watching health news (%)

- <100% FPL
- 100%-300% FPL
- ≥300% FPL

Household income (% of the Federal Poverty Level)
Do health websites cater to low literacy users?

- Results of searching for information on breast cancer and using the readability formula SMOG
  - Web MD—grade level of 13
  - Breast Cancer.org-grade level of 12
  - National Institutes of Health-grade level of 9
Potential Solutions to Address Disparities: Three Examples

• **Click to Connect (C2C):**
  *Individual* capacity building to promote internet literacy among the underserved

• **Planet MassCONECT:**
  *Community-based organization’s* capacity building to promote adoption of evidence-based interventions

• **MassCONECT:**
  *Community* capacity to change the information environment on health disparities in the three Massachusetts Communities
Click to Connect

Does improving access and ability to use the Internet among low literacy, low SEP individuals lead to changes in several factors that comprise health literacy including:

- Media use and exposure to health information
- Internet use
- Health information seeking and information efficacy
Click to Connect **Focus Groups**

- To inform the development of a computer-based project targeting low literacy/underserved adults and their access to health information on the Internet
Results: Computer Use and Internet Access

• The majority of participants reported having computer use experience.

• Most participants accessed computers at their school or library and primarily used computers for school work and resume writing/job searching.

• Participants most often reported receiving technical assistance from younger family members.

• Half reported using the Internet, but only 3/14 had high speed access in their home.
Results: Challenges with the Internet

• Participants’ reported having difficulty obtaining information on the Internet.

“Sometimes when you’re typin’ out somethin’...somethin’ else always pops up before you see what you’re wantin’.”

“I don’t look on the Internet, cause I just want to get straight to what I need, to be on the computer. I don’t want to have a million selections I have to go to.”

“I have a very old computer, so it works very, slow, you know.”
Click to Connect Intervention
Web Portal: First Iteration
Web Portal Post Usability Testing

February is American Heart Month

Heart disease is the number-one killer of people in the United States today. But there are many ways to take control and help keep your heart healthy. Having healthy habits means you will be less likely to have heart disease or a heart attack. Find out what you can do to stay healthy for yourself - and for your valentine!

Click on the "Read more" button to learn about it.

Cervical Health Awareness

Did you know that cervical cancer is often caused by HPV, a sexually transmitted disease? Did you know that cervical cancer can be prevented - and can be treated? It’s found early enough? Find out what you can do to protect yourself from this disease.

Click on the "Read more ..." button to learn about it.

Learn About HIV and AIDS

There are about 36 million people living with HIV, another type of sexually transmitted disease.
Class is the highlight of my life and helps me relax.

Learning the computer – something I have been left out because I just did not have no one to teach me step by step.

I feel good about myself when I come to class.

Everything they said is very important to me. They say something I have never heard before I come here. All what they said are very wonderful to my mind.

I’m not afraid of making mistakes on my computer.
Implications

• Class and Poverty are central to understanding Communication Inequalities
  - Who speaks for the poor?
  - Who will design the system for the poor
  - If they don’t know how to manipulate the technology, how will they generate the content for themselves?

• Central to science and practice
  - “correct” not “politically correct” science (Krieger, 2007)
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