What explains SES-related disparities in smoking and how can we achieve health equity in tobacco control?

Donna Shelley MD MPH
Department of Population Health
NYU School of Medicine

Overview
- Socioeconomic status defined
- Trends in tobacco use
- Evidence based policies and programs
- Socioecological Model and Fundamental Causes of Disease
- A closer look at two contributors to persistent disparities
  - Marketing
  - Low access and ineffective cessation interventions
- Policy and community solutions - road to health equity in tobacco control

Socioeconomic (SES) status defined
- Socioeconomic status is often measured as a combination of education, income, and occupation.
- These are not interchangeable and have different kinds of influences on health behavior
- BUT it is convenient to refer to SES as a summary term (without assuming it represents a unidimensional construct)
(Pampel Annu Rev Sociol 2010)

US Trends in Smoking Prevalence

Smoking Prevalence in the US
Smoking rates have declined to 19% from 2005 to 2014.

How did we do it?
- LEGISLATION
- TAXATION
- EDUCATION
- CESSATION
- EVALUATION
All categories declined but disparities persist and may be worsening: trends by poverty level

Trend in smoking by education (2005-2014)

Downward trends in overall prevalence mask smoking disparities among low SES populations

Smoking status among adults with mental illness is higher than the general population and there is an SES gradient

What is the cause of SES related health disparities?

actual causes of death in the United States, 2000

Table 2. Actual Causes of Death in the United States in 1990 and 2000

<table>
<thead>
<tr>
<th>Actual Cause</th>
<th>No. (%) in 1990</th>
<th>No. (%) in 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobacco</td>
<td>430,000 (14)</td>
<td>433,000 (15.1)</td>
</tr>
<tr>
<td>Poor diet and physical</td>
<td>350,000 (14)</td>
<td>385,000 (15.6)</td>
</tr>
<tr>
<td>Alcohol consumption</td>
<td>150,000 (5)</td>
<td>85,000 (3.5)</td>
</tr>
<tr>
<td>Motor vehicle</td>
<td>25,000 (1)</td>
<td>43,000 (1.8)</td>
</tr>
<tr>
<td>Firearms</td>
<td>35,000 (1)</td>
<td>29,000 (1.2)</td>
</tr>
<tr>
<td>Nocut drug use</td>
<td>30,000 (1)</td>
<td>20,000 (0.8)</td>
</tr>
<tr>
<td>Total</td>
<td>1,160,000 (63)</td>
<td>1,159,000 (63.2)</td>
</tr>
</tbody>
</table>

Notes: Data are from McGinnis and Foege. The percentages are for all deaths.
Whitehall study: Risky behavior only part of the explanation for increased mortality in lower SES groups

U.K. CIVIL SERVICE Mortality - All Causes

Fundamental root causes of SES disparities in health outcomes

- Fundamental causes theory questions the emphasis on individual behavior.
- Social and contextual factors associated with low SES as root causes:
  - Inequality and stress
  - Discounting the future (fewer benefits)
  - Access to knowledge and information
  - Efficacy and agency (ability to act on knowledge)
  - Social support, social cohesion, peer influences

Theoretical Framework: The Socioecological Model

"A model of health that emphasizes the linkages and relationships among multiple factors (or determinants) affecting health."

Institute of Medicine, 2003

Vector in action: Targeted tobacco advertisements

- Industry documents show that tobacco companies marketed their products to low SES women by distributing coupons with food stamps, discounting cigarettes, developing new brands, and promoting luxury images.
- 20% more cigarette advertisements are found in minority and low SES communities than in more affluent, non-minority communities.
- Retailers located in minority communities tend to market cheaper cigarettes, while those in more affluent, non-minority communities offer coupons and discounts.

Vector in action: Tobacco retail outlet density, a community-level/environmental factor impacting individual cessation behavior

- Tobacco retail outlet density can influence cessation by decreasing the time and resources needed to purchase tobacco products.
- Outlet density increases environmental cues to smoke, encouraging impulsive purchases.
- Studies have shown that tobacco retail outlet density is higher in high-poverty areas.

Vector in action: Tobacco retail outlet density, a community-level/environmental factor impacting individual cessation behavior

- Cantrell study examining high-poverty census tracts between 35th and 70th percentiles showed an estimated 2.42X increase in high poverty areas.
- Why? Tobacco advertising/promoting promotes smoking in high-poverty areas.
- Policy solution: Outlawing/clearing legislation to monitor the number type, and location of outlets, particularly in high-poverty communities.

LEGISLATION: ADDRESSING MARKETING AND PRICE DISTORTION THAT DISPROPORTIONALLY AFFECT LOW SES

Local regulation: Point of sale regulations in NYC Case Example

- October 30, 2013: NYC passes historic legislation
- Law prohibits retailers from redeeming coupons, multi-pack deals, buy-one-get-one deals or any other price-reduction promotions
- Retailers are also prohibited from giving away or discounting other items, such as lighters, in connection with the sale of tobacco products or cigarettes.
- All cigarette and little cigar packs must be sold for at least $10.50.
- Penalties: $1000 for 1st violation, $2000 for 2nd, $5000 for 3rd

TAXATION: KEY TOOL IN TOBACCO CONTROL BUT SOCIAL AND ECONOMIC CONTEXT CAN UNDERMINE POLICY

The $5 Man: Source of low cost cigarettes undermines tax policy

- 2002 NYC tax raised to $3. Retail prices averaged $7.50-$8.00 per pack
- Most smokers said that regardless of price, they would find a way to purchase cigarettes legally or illegally, because they were unable to quit
- $5 man made reduce-price cigarettes more accessible than cessation services.

Source: Shelby et al, 2010

Predictors of Buying More Cigarettes From a Person on the Street in response to 2008 tax increase

<table>
<thead>
<tr>
<th>Demographic variable</th>
<th>AOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race/ethnicity</td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic White/Asian/other</td>
<td>Ref 1.00</td>
</tr>
<tr>
<td>Non-Hispanic Black</td>
<td>9.19*</td>
</tr>
<tr>
<td>Hispanic</td>
<td>6.87</td>
</tr>
<tr>
<td>Household poverty, % FPL</td>
<td></td>
</tr>
<tr>
<td>&lt; 200</td>
<td>2.43*</td>
</tr>
<tr>
<td>≥ 200</td>
<td>Ref 1.00</td>
</tr>
</tbody>
</table>


Quitting smoking among adults-US by education 2010

Individual level interventions addressing social context and social determinants of health

- Proactive Tobacco Cessation Outreach to Smokers of Low Socioeconomic Status
- Randomized into usual care OR: (1) telephone-based motivational counseling, (2) free nicotine replacement therapy (NRT) for 6 weeks, (3) access to community-based referrals to address socio-contextual mediators of tobacco use, and (4) integration of all these components into the EHR system.

Table 1. Use of the Intervention Components Among Individual in the Intervention Group and Smoking Cessation (by Component)

<table>
<thead>
<tr>
<th>Component</th>
<th>Usual Care</th>
<th>Telephone Intervention</th>
<th>Provider Advice</th>
<th>Accessed Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spoke to the tobacco treatment specialist</td>
<td>96 (93.2)</td>
<td>132 (95.2)</td>
<td>158</td>
<td>120</td>
</tr>
<tr>
<td>Received reverse replacement nicotine patch</td>
<td>99 (96.3)</td>
<td>135 (96.0)</td>
<td>158</td>
<td>130</td>
</tr>
<tr>
<td>Received a telephone counseling</td>
<td>99 (96.3)</td>
<td>138 (95.6)</td>
<td>158</td>
<td>130</td>
</tr>
<tr>
<td>Received advice for smoking cesation</td>
<td>99 (96.3)</td>
<td>138 (95.6)</td>
<td>158</td>
<td>130</td>
</tr>
<tr>
<td>Received a telephone counseling</td>
<td>99 (96.3)</td>
<td>138 (95.6)</td>
<td>158</td>
<td>130</td>
</tr>
<tr>
<td>Access to community-based referral</td>
<td>96 (93.2)</td>
<td>132 (95.2)</td>
<td>158</td>
<td>120</td>
</tr>
</tbody>
</table>


The Ecological Model: Applying the model to achieve health equity in tobacco control

Theory Application

- Ecological Model
  - Framework for determinants of health

Ecological View
- Understanding health outcomes in that framework

Ecological Approach
- Developing strategies to influence levels/determinants

Source: Institute of Medicine, 2003

Achieving health equity in tobacco control

- Conduct surveillance and evaluation activities to help understand the burden of tobacco-related disparities and guide policy development implementation
- Reduce the number, location, and density and types of tobacco retailer
- Supply health care providers with cessation materials that are tailored towards their clients’ cultures, literacy levels, native languages, and ages
- Incorporate fundamental principles of health equity that affirm equal treatment of all groups (horizontal) and provide supplemental support for groups that are marginalized (vertical)
- Engage leaders in the community in all phases of policy planning, implementation, and the evaluation of tobacco control programs
- Stop doing things that don’t work: ask why it is not working; THINK ABOUT FUNDAMENTAL CAUSES and THINK OUT OF THE BOX
THANK YOU
DONNA.SHELLEY@NYUMC.ORG