Obesity and Poverty in America: time and demographic trends

Roland Sturm, Ph.D.
Senior Economist
RAND
Why the Recent Obesity Epidemic?

• Many competing hypotheses
  ➢ Transportation
  ➢ Television
  ➢ More work hours
  ➢ Not enough exercise
  ➢ Fast food
  ➢ Affluence
  ➢ Poverty
• Compatible with facts?
Different Theories Need Not Be Contradictory

• Scope of theories narrower than proponents assume
• Synthesis often better than “either … or”
• Misunderstandings because no common knowledge
  – facts or assumptions?
• Conventional wisdom unreliable guide
• Let’s start with looking at the bigger picture and data about societal trends
Outline of Talk

- Poverty and Obesity
- What has changed in our lives? Trends in time and money
- Time use differences by income groups
Obesity and Poverty?

- Not new idea that obesity has adverse health effects
- But isn’t obesity really a disease of affluence?
- Traditionally the privilege of the wealthy
  - Still is in many countries
  - Shouldn’t that reduce socioeconomic health disparities?
Thou seest I have more flesh than another man, and therefore more frailty

... King Henry the Fourth, Part I - Act III, Scene III
The fat cats were fatter 50 years ago


Based on data from National Health Examination Survey, 1959-1962
But not women

Overweight by Family Income, US women 1959-1962

Based on data from National Health Examination Survey, 1959-1962
The Poor Are Often Thinner in Other Countries


Source: Xu F et al., Public Health Nutrition, 2005
Even if Beyond the Health Transition: Mortality trends in China and India, 1990 and 2020

China

1990

2020

India

1990

2020

Death rates per 100,000

In the US, Obesity and Poverty now occur together more often ...
...Among Youth

Overweight among Children and Adolescents by Federal Poverty Level, 2001-2004

By Poverty

- <100%
- <200%
- 200%+

Based on Table 74, NCHS Chartbook, 2006
Among Women

Based on data from NHANES, 2001-2004

Overweight and Obesity by Family Income, Women, 2001-2004

Overweight and Obese

- <$20,000
- >$65,000

Based on data from NHANES, 2001-2004
… But Not Among Men

Based on data from NHANES, 2001-2004

Overweight and Obesity by Family Income, Men, 2001-2004

- Overweight
- Obese

- <$20,000
- >$65,000
Subpopulations seem to have gained similar weight in last 20 years

- But consistent differences at every point in time
- Reversal must have occurred prior to “obesity epidemic”

Source: Truong and Sturm, AJPH, 2005 Sep;95(9):1602-6
Trends in Average Body Mass Index by Relative Income

(but income categories not really comparable over time)

Source: Truong and Sturm, AJPH, 2005 Sep;95(9):1602-6
Outline of Talk

• Poverty and Obesity
• What has changed in our lives? Trends in time and money
• The role of income
Time and Money

• What do people do?
  ➢ Time use data

• Why study time use?
  ➢ Scarcest resource
  ➢ Regardless of economic growth, a day has 24 hours
  ➢ In contrast to money, everybody has the same amount each day

• Where does the money go?
  ➢ Gross output by industry
Where Does the Money Go?

- Leisure time industries outpace GDP growth
- “Active” industries at twice the rate of GDP
  - Sporting goods, fitness clubs, dance studio
- “Passive” industries grow even faster
  - Entertainment electronics
  - Spectator sports
- Food expenses declines as share of income, but buy much more energy
- Pushes puzzle one step back: Why the increase?
- Technological progress
  - Revolution in mass production of food
Retail: Sporting Goods Doubled, While Real GDP Increased 50%
But Dwarfed By Growth of Home Electronics (TV, DVD)

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Source: Bureau of Economic Activity, Gross Domestic Product By Industry.
Industries More Closely Related to PA: Sports Clubs Doubled ...
But Sedentary Spectator Sports Grew Faster…

Source: Bureau of Economic Activity, Gross Domestic Product By Industry
While Leisure Industries Are Growing Fast, Food Industries Decline in Importance …

Food Expenditure as Share of Disposable Personal Income

Source: USDA, Economic Research Service
... But Supply More Calories

U.S. Food Supply, Energy per capita per day

Source: USDA, Economic Research Service
Price Indices

Source: BLS
Price trends in food types likely to exacerbate income effects

- Technological progress and production efficiencies affect relative prices
  - Less change for perishable/fresh goods means higher prices
- Double hit for lower income groups
  - “Prudent” diets become relatively more expensive everywhere
  - Perishable, more expensive foods less available in small stores
  - Even though generally more food stores in low income neighborhoods, smaller size and less efficient means means higher prices
Where does the time go?

Active Leisure Time Keeps Increasing

• In BRFSS, additional 20 mins/week in last decade in physical activity for the “typical” American

• Percent of inactive keeps falling
  ➢ From 30.7 in 1990 to 27.4 in 2000
  ➢ More than 3 percentage point

• But small relative to total increase in free time
Home Production

- Drop of 5 hours/week
- Biggest reduction in cleaning and meal preparation
- Meal preparation more important for diet than physical activity
  - Wider range and variety of prepared food available at lower TIME costs
  - Variety of snacks always available, including while watching TV/DVD
Trends in Time Use Differ For Children

• For adults 18-64, free time increased by 8 hours per week from 1965 to 2003-2005
  • increase for both men and women
  • in or out of labor force

• For children 3-12, free time decreased by 7 hours per week from 1981 to 1997
Changes in Weekly Minutes Spent on Activities from 1981 to 1997, Age 3-12

Source: calculations based on data from Hofferth and Sandberg (2001)
Outline of Talk

• Poverty and Obesity
• What has changed in our lives? Trends in time and money
• Time use differences by income groups
Work and Leisure Time
Among Women By Family Income

Paid Work
Housework
Dep Care
Total Work
Leisure, Socializing
Transportation

<$20k  20-40k  40-60k  >60k
More Leisure Time
Among Lower Income Full Time Workers

• Lowest versus highest earnings group among full time workers
  – more TV watching (22 mins/day), more games (7 mins)
  – more socializing (15 mins)
  – Less reading (8 mins/day)
  – Less active participation in sports (7.5 mins)
Differences between lowest and highest income women (adjusted for sociodemographics)

- Positive difference: more time in low income group
- No substantial or highly significant differences in:
  - Grocery shopping
  - Travel time for groceries
  - Personal care
  - Housework other than food preparation
  - Religious activities
  - Telephone calls
- Race/ethnicity other important characteristic

<table>
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<th>Activity</th>
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<td>Child Care</td>
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<td>Paid Work</td>
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<td>TV</td>
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<td>Sports, Exercise</td>
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<td>Transportation</td>
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Differences between lowest and highest income men (adjusted for sociodemographics)

- Positive difference: more time in low income group
- No substantial or highly significant differences in:
  - Grocery shopping
  - Travel time for groceries
  - Personal care
  - Education
  - Religious activities
  - Telephone calls

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Summary

• Obesity and poverty currently correlated among women and youth in US
• Income marker for vulnerable groups even if causes and consequences are less clear
• Does obesity cause poverty?
  – Marriage market likely pathway for women
• Does poverty cause obesity?
  – Some plausible pathways exist, empirical evidence less clear, one of the themes today
• Or unobserved other factors?
  – Likely for some subgroups (psychotic disorders)
“The German Women are generally so disagreeable to an English Eye, that it wou’d require great Portions to induce Englishmen to marry them…..dick und starcke, that is, thick and strong, always enters into their Description…”

*Benjamin Franklin*, ca. 1753, about immigrants