



ALCOHOL RESEARCH GROUP

ARG

Appraising alcohol-related social and health problems in the US: Improvements in data quality and translational strategies promise better policy recommendations

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Background & Thesis

- ***Interventions to reduce alcohol-related damage need to take account of:***
 - *the range, scope and severity of alcohol harms*
 - *evidence of the most effective and appropriate prevention strategies (interventions & policies).*
- ***Individual and aggregate data triangulation***
 - *provides a better picture of the distributions of alcohol-related harms (and a few possible benefits)*
 - *allows breakdowns by subgroup (age, gender and major ethnic minorities, other subgroups)*
 - *facilitates future projections, especially APC models*

Background and Definitions

“The real-world implications [of drink size findings] are that we are underestimating alcohol use in the US and in specific populations [using] traditional methodology. This is problematic given that policy, treatment and prevention efforts are based on basic epidemiologic data on alcohol use and related problems”¹

“Alcohol policy is defined broadly as any purposeful effort or authoritative decision on the part of government or non-government groups to minimize or prevent alcohol-related consequences.”²

¹Midanik press release on Kerr, Greenfield et al, ACER 2006

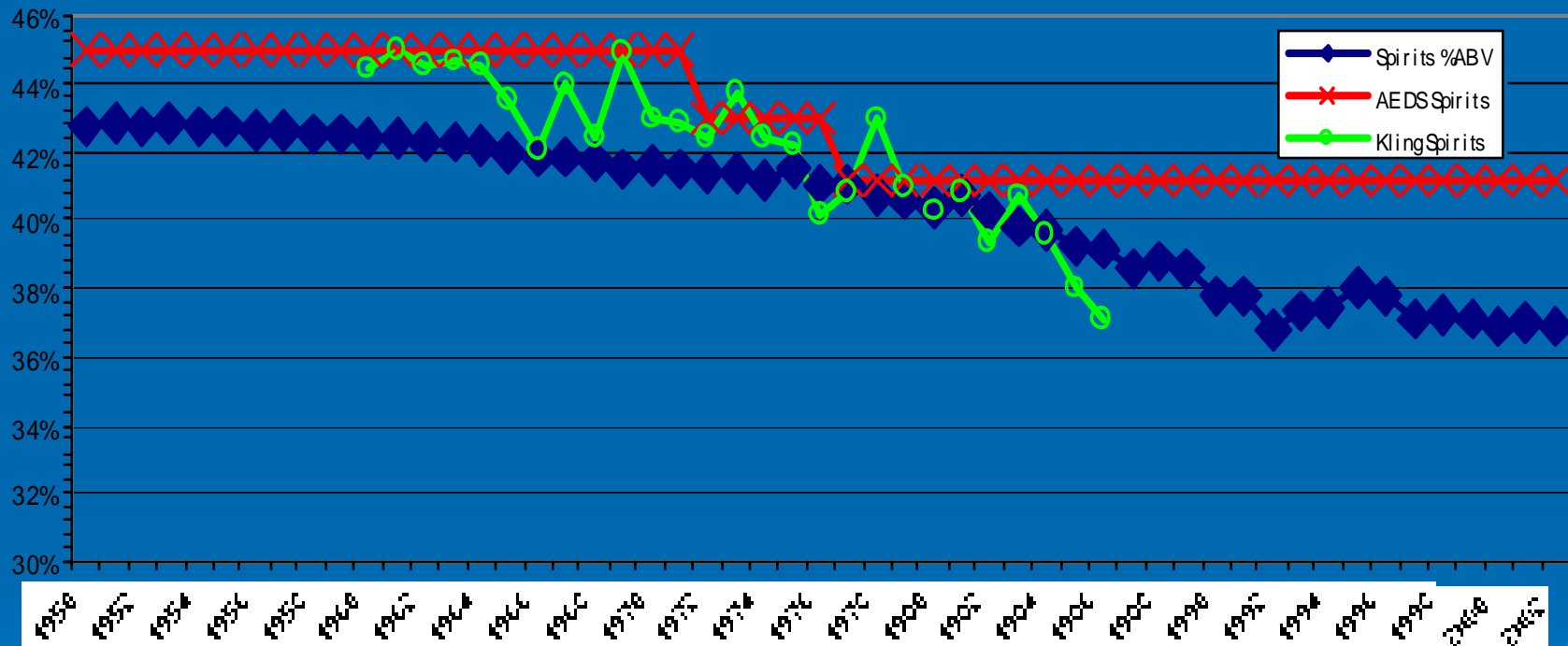
²Babor et al. (2003), p 95 *Alcohol: No Ordinary Commodity*

Data Source I: 50-year series

- *Alcohol Consumption and Mortality in the US, 1950-2000* (W. Kerr PI; NIAAA R01 AA014362)
- Study has developed improved data for a sequence of time-series analyses of alcohol-related mortality by cause
- Series for US and its states (regions also studied).
- accurately estimated ethanol conversion factors specific to year and state; used for per capita ethanol intake — wine, beer and spirits sales data.
- Mortality by-cause data on state and national levels; various covariates — tobacco, soda, etc.
- detailed drinking pattern measures from population survey series extending over 25 years.

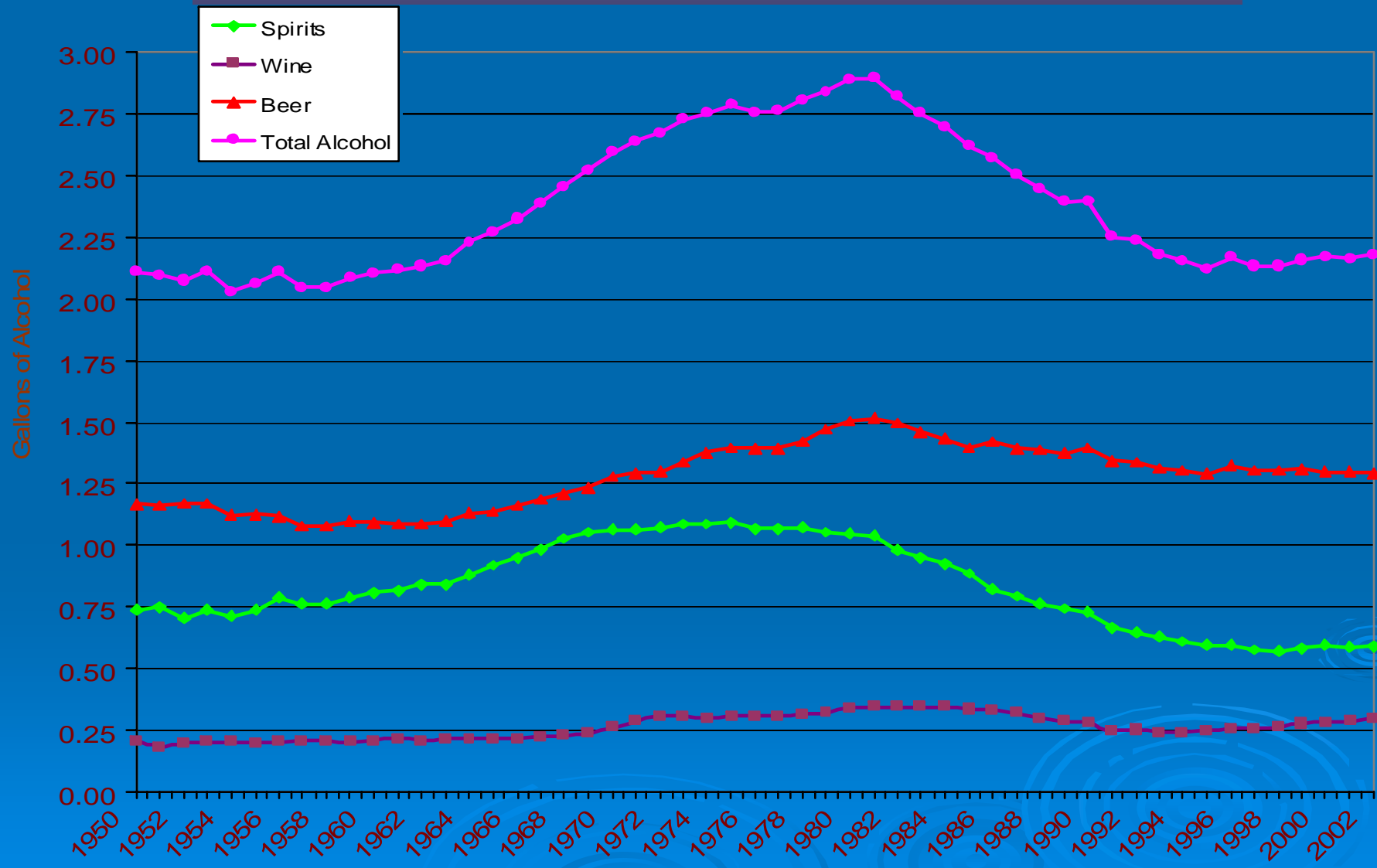
Example: Discrepancies for Spirits

Estimated %ABV of Spirits vs AEDS and Kling



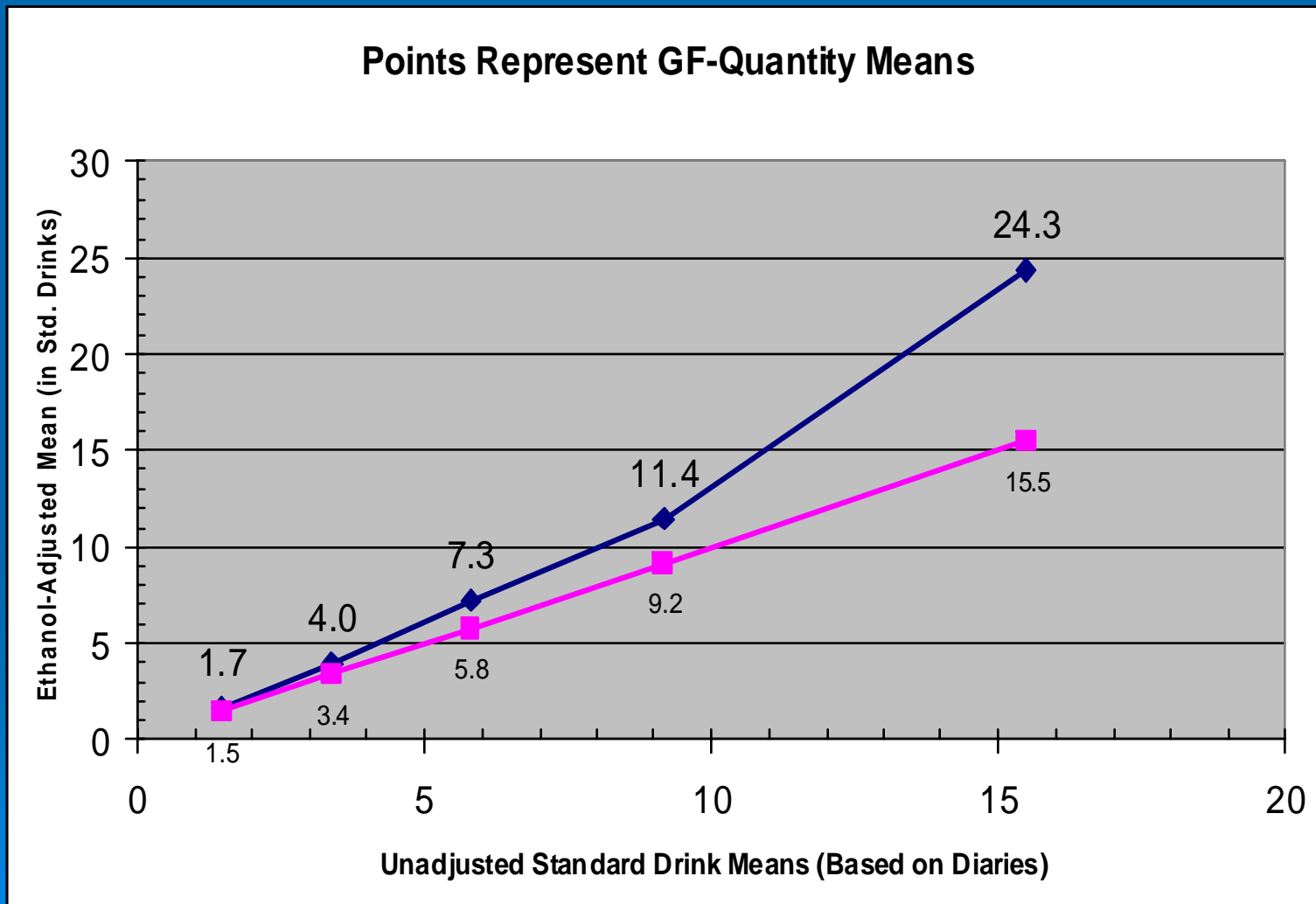
Sources: Lakins, Williams, Yi, & Smothers Surveillance Report #66 (2004);
Kling, *JSA* (1989, 1991); Kerr, Greenfield, & Tujague *ACER* (2006)

U.S. Per Capita Consumption of Pure Alcohol from Beer, Wine and Spirits



Source: Kerr, Greenfield & Tujague *ACER* (2006)

Ethanol-adjusted GF-Quantity means (Blue line)
compared to unadjusted means (Red line)
(both in U.S. standard drink equivalents–0.6 ounces ethanol)



Source: Greenfield et al, KBS Budapest, 2007

Data Source II

National Alcohol Surveys (NAS)

Year	1979	1984	1990	1995	2000	2005
Mode	In-person	In-person	In-person	In-person	Telephone	Telephone
Sample Size	1,772	5,221	2,058	4,925	7,612	6,919
Response Rate	71%	72%	70%	77%	58%	56%
Ethnic Oversample	No	Yes	No	Yes	Yes*	Yes*

* 2000 and 2005 surveys also included low-population state oversample

National Alcohol Surveys

Repeated cross-sectional surveys: every 5-years

1979-1995: used multi-stage probability samples

Larger telephone surveys include 50 states + DC and used CATI surveying with list-assisted RDD

6 published survey mode studies: high comparability

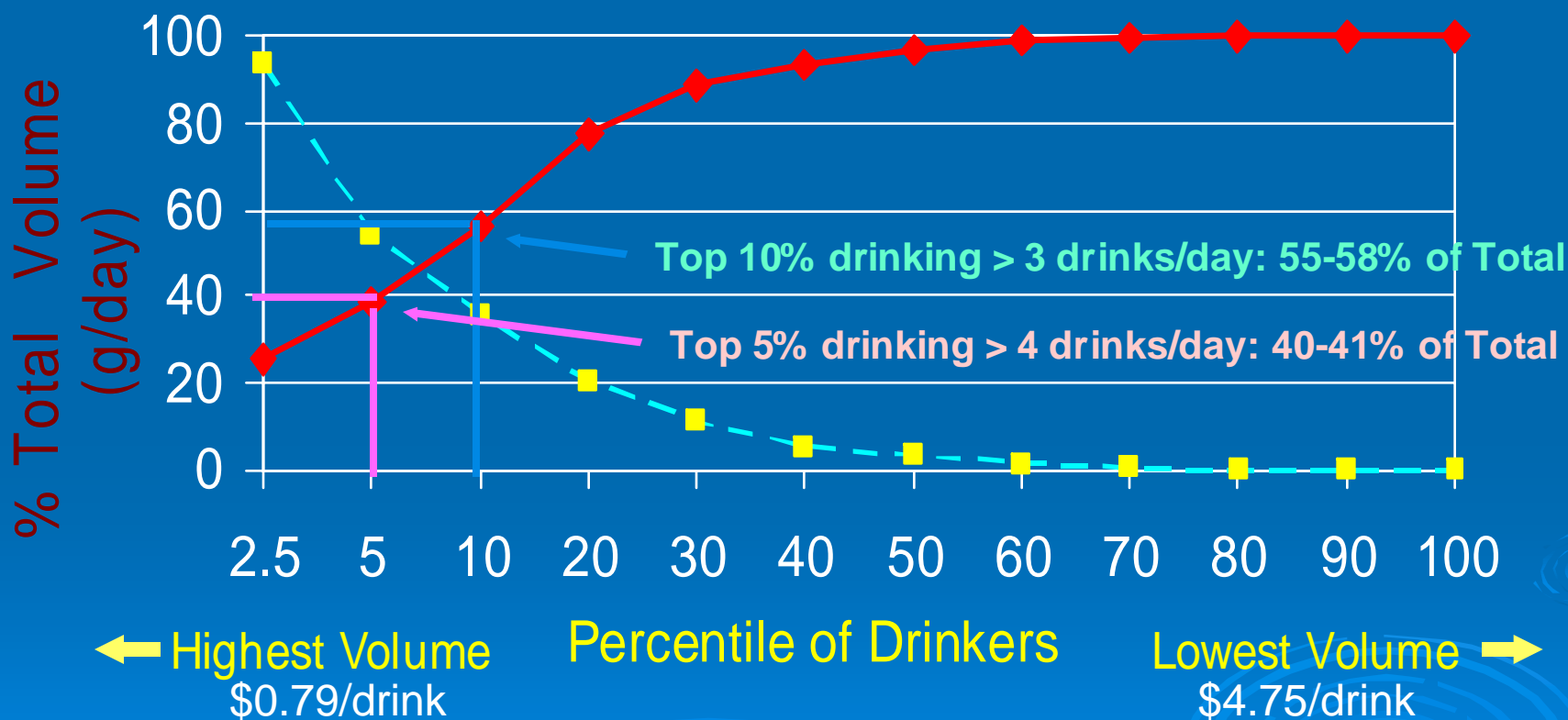
1984, 1995, 2000, 2005 all over-sampled minorities

2000 & 2005 over-sampled 13 low-population states

2000 & 2005 surveys allow for drink ethanol adjustment based on drink size and brand studies (home and bar), and brand share data developed for time series project

Concentration of U.S. Alcohol Consumption

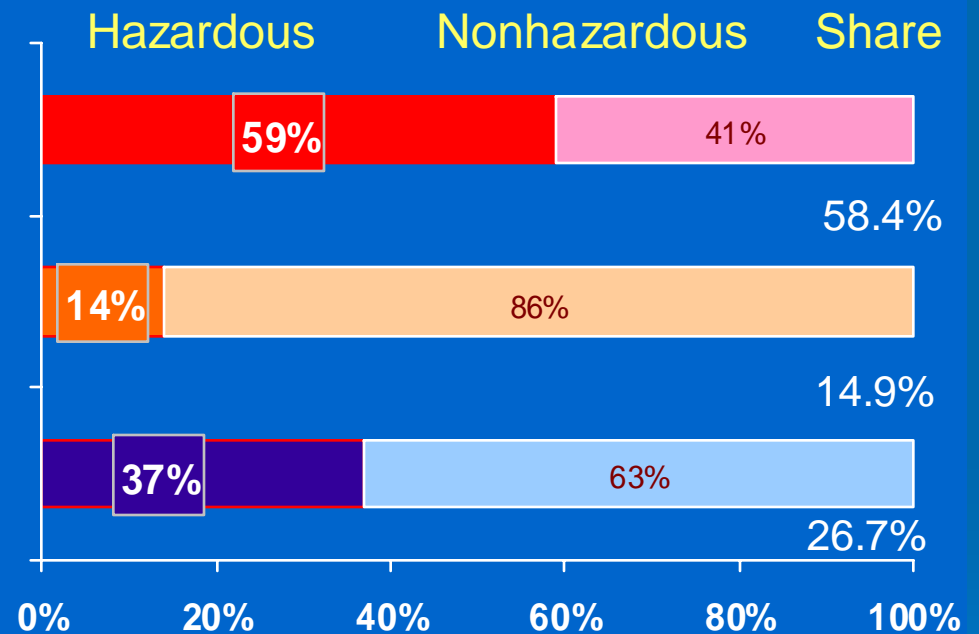
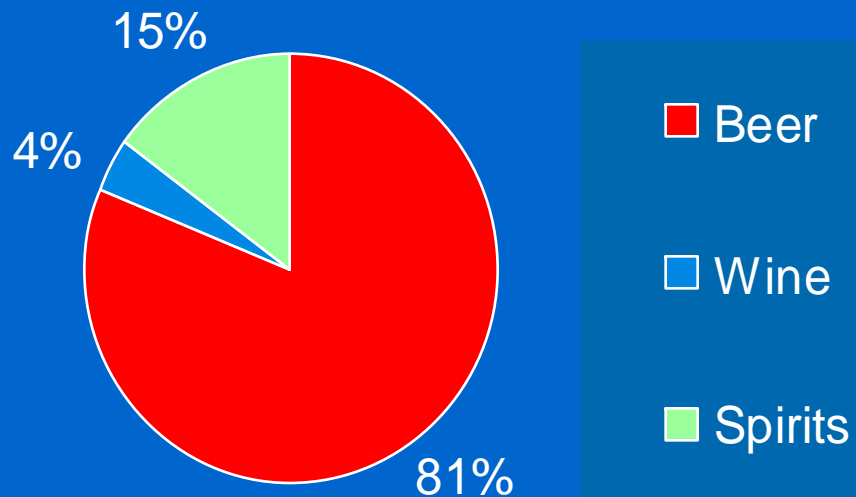
—◆— Cumulative Percent -■- Volume (g/day)



Sources: Greenfield & Rogers, *JSA*, 1999; Kerr & Greenfield, *ACER*, 2007

Hazardous Drinking: U.S. Percentage

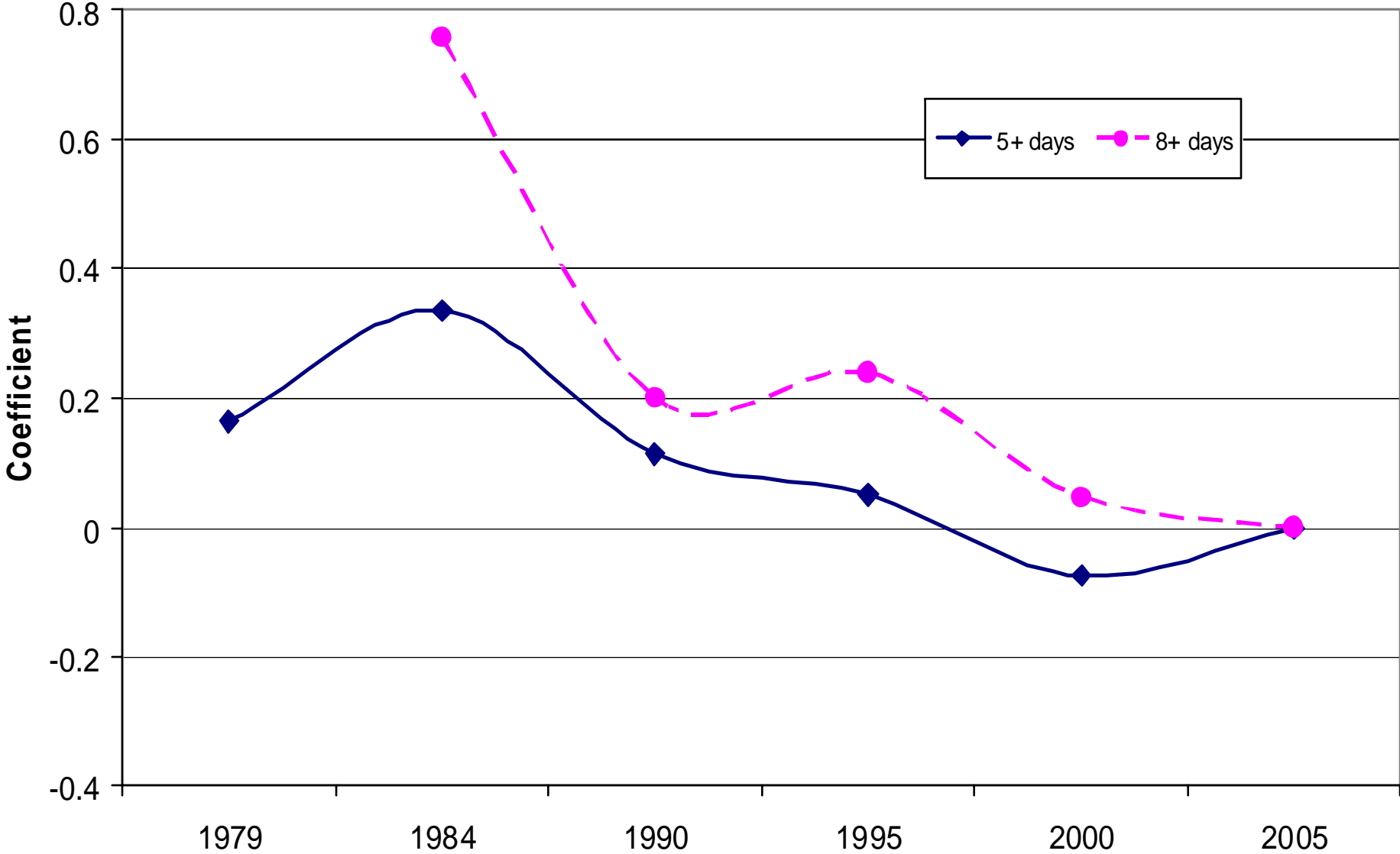
OF TOTAL



(Hazardous drinking occurs more in bars, other people's parties, public places)

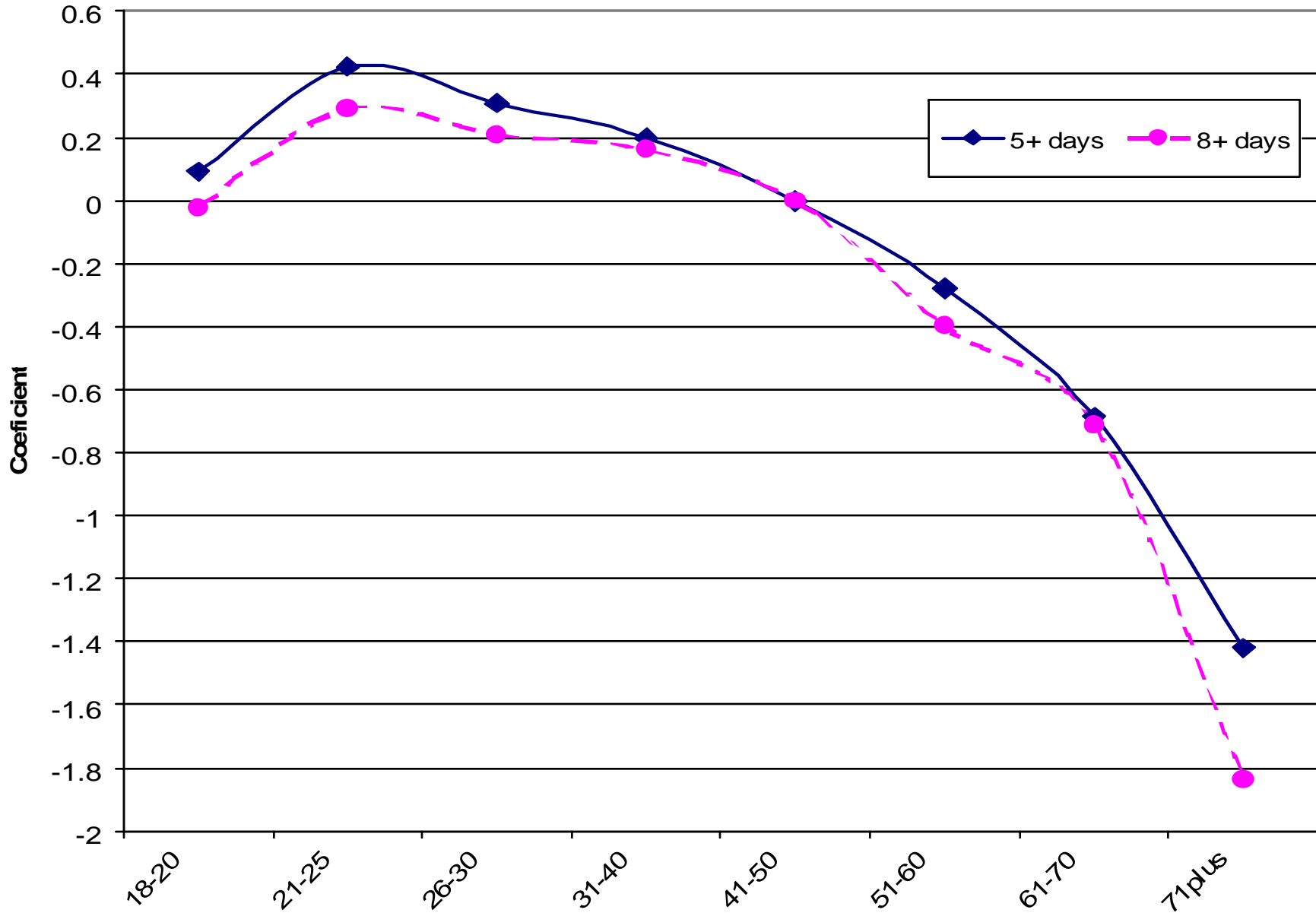
Source: adapted from Rogers & Greenfield, *JSA*, 1999

Men's Heavy Drinking Days: Period Effects



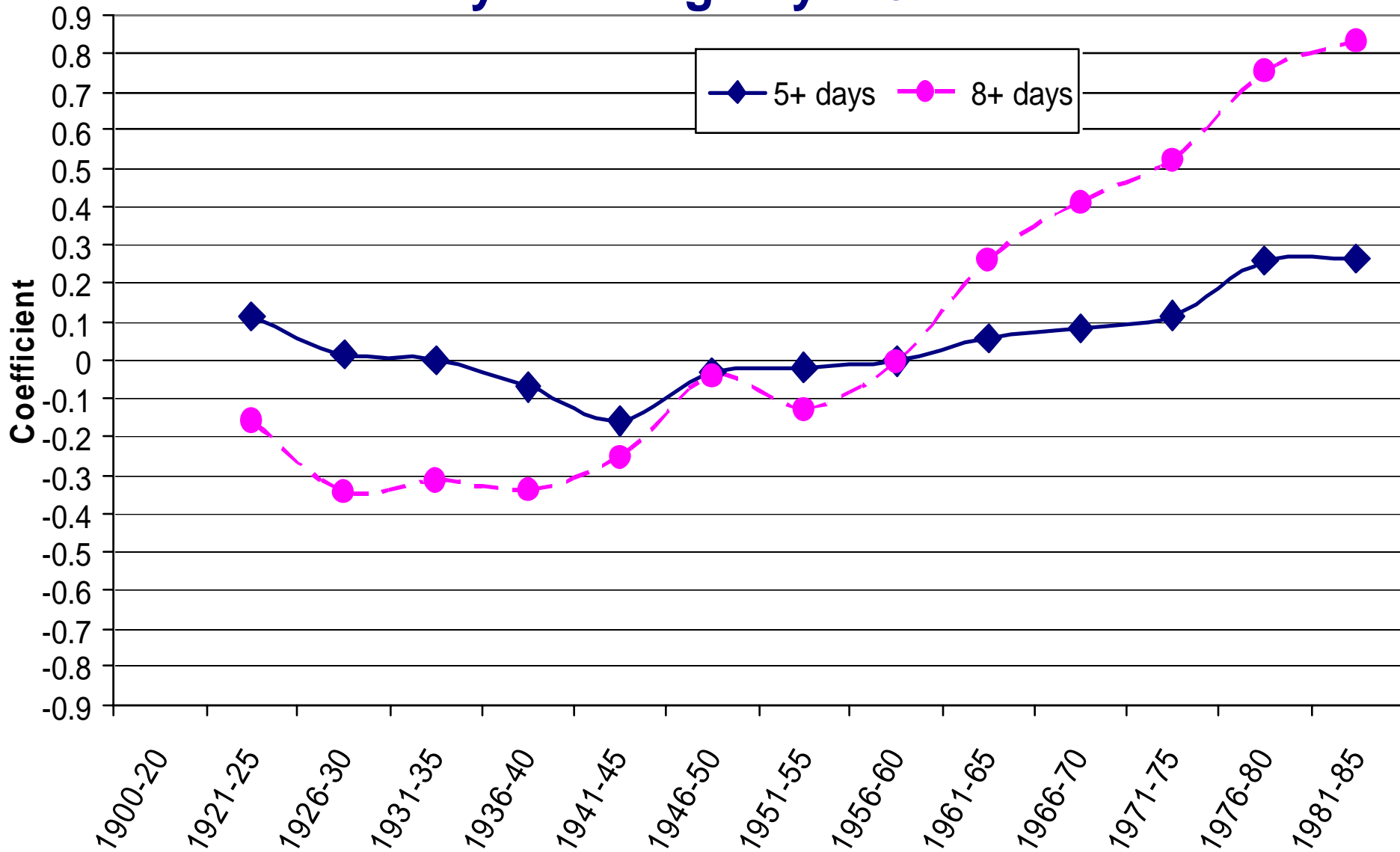
Source: 1979-2005 National Alcohol Surveys

Men Heavy Drinking Days: Age Effects



Source: 1979-2005 National Alcohol Surveys

Men's Heavy Drinking Days: Cohort Effects

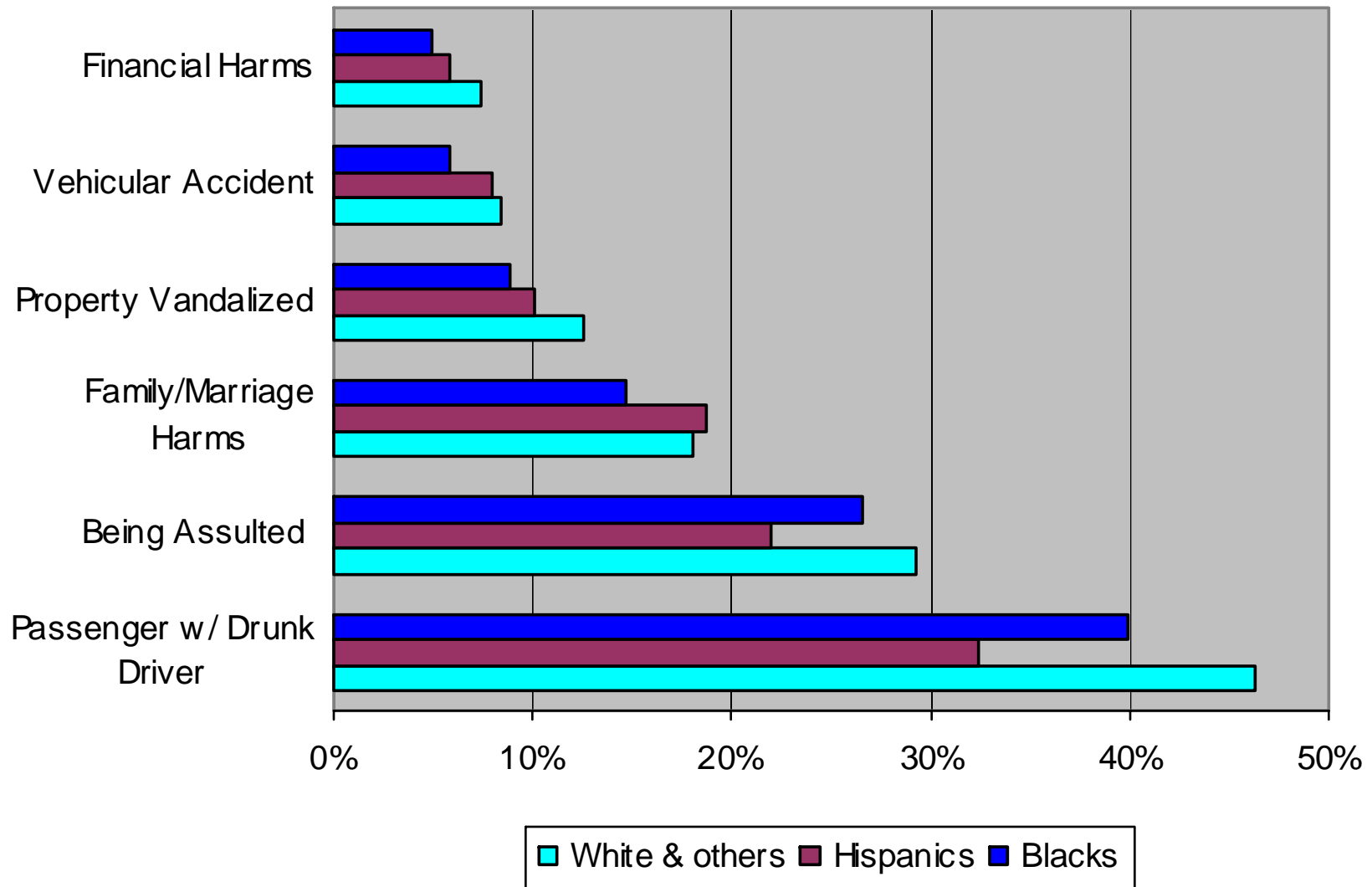


Source: 1979-2005 National Alcohol Surveys

ARG Research on Ethnic Minority Populations

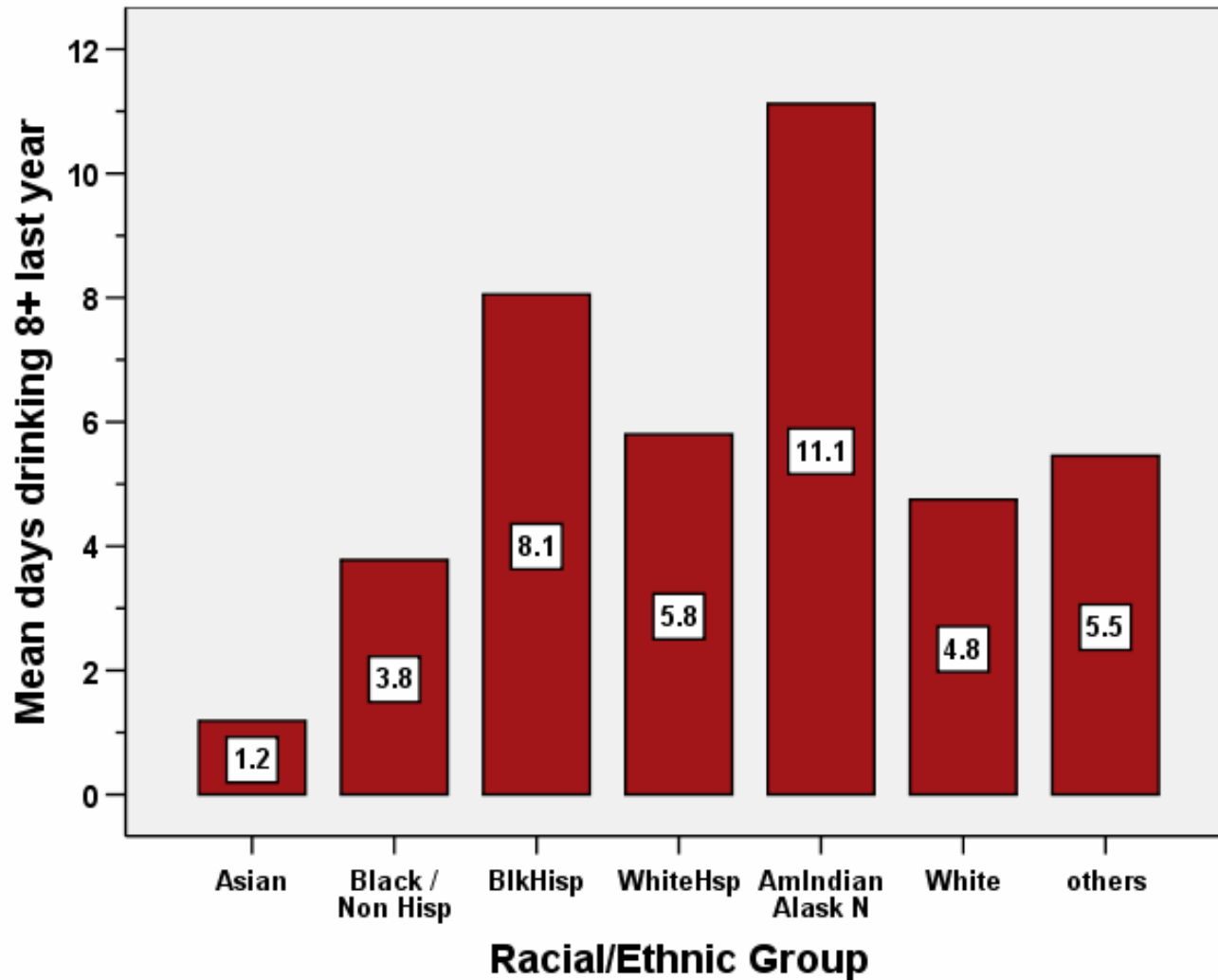
- Ethnic minorities indicate differing quantities per occasion, drinking contexts and drink sizes (drink ethanol)
- Ethnic minority differ on intake patterns, drinking contexts, treatment need (symptom severity and comorbidities) and access
- Investigate disparities in alcohol-related morbidity, mortality, injuries, & health care
- Also differ in life course of alcohol intake and reported problems

Lifetime Prevalence of Specific Externalities by Ethnicity



Source: Greenfield et al APHA 2006 (under review)

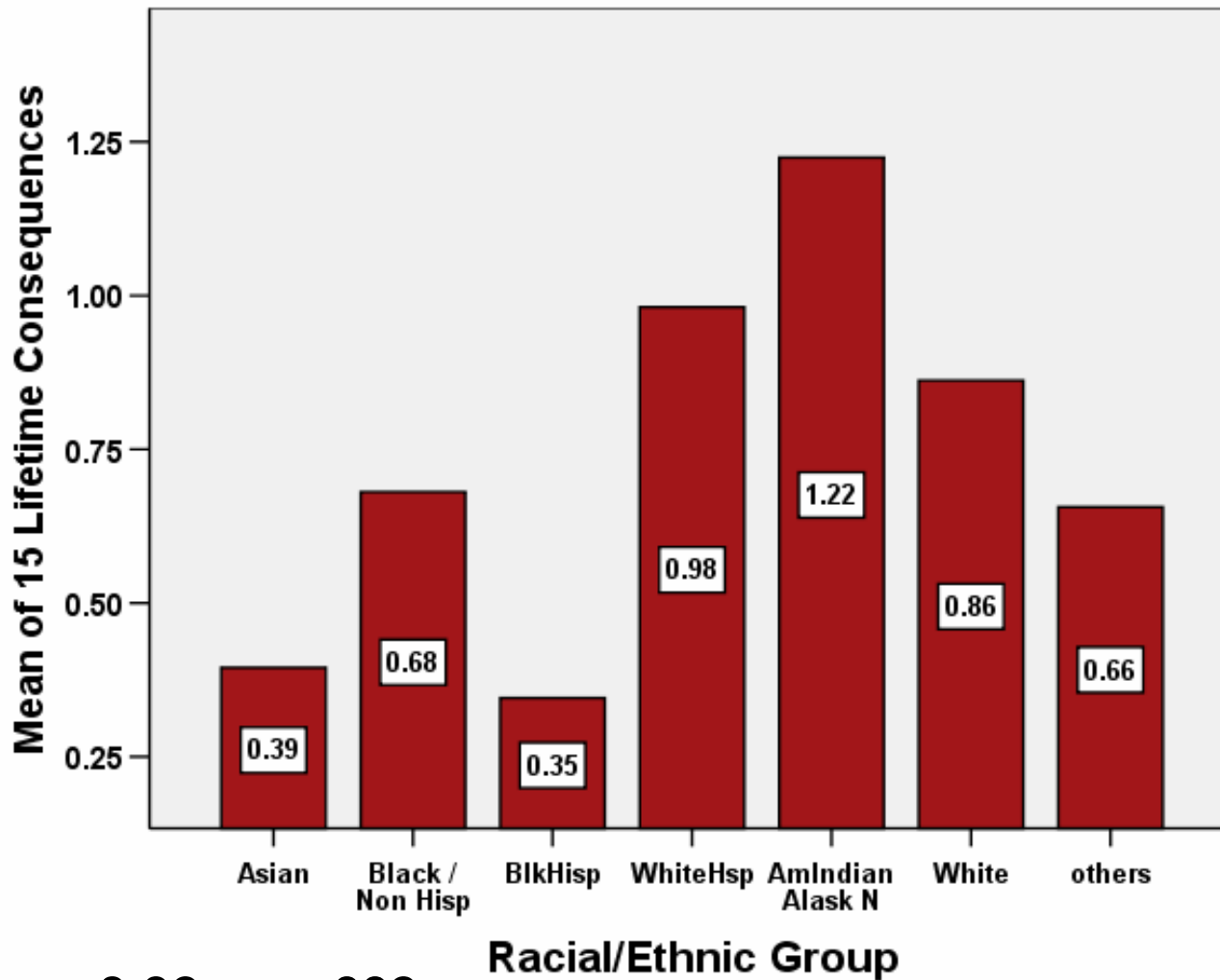
Frequency of High Risk (8+) Drinking in Prior Year by Ethnicity in 2005



$F_{(7, 5366)} = 2.23, p = .03$

Source: 2005 National Alcohol Survey (weighted)

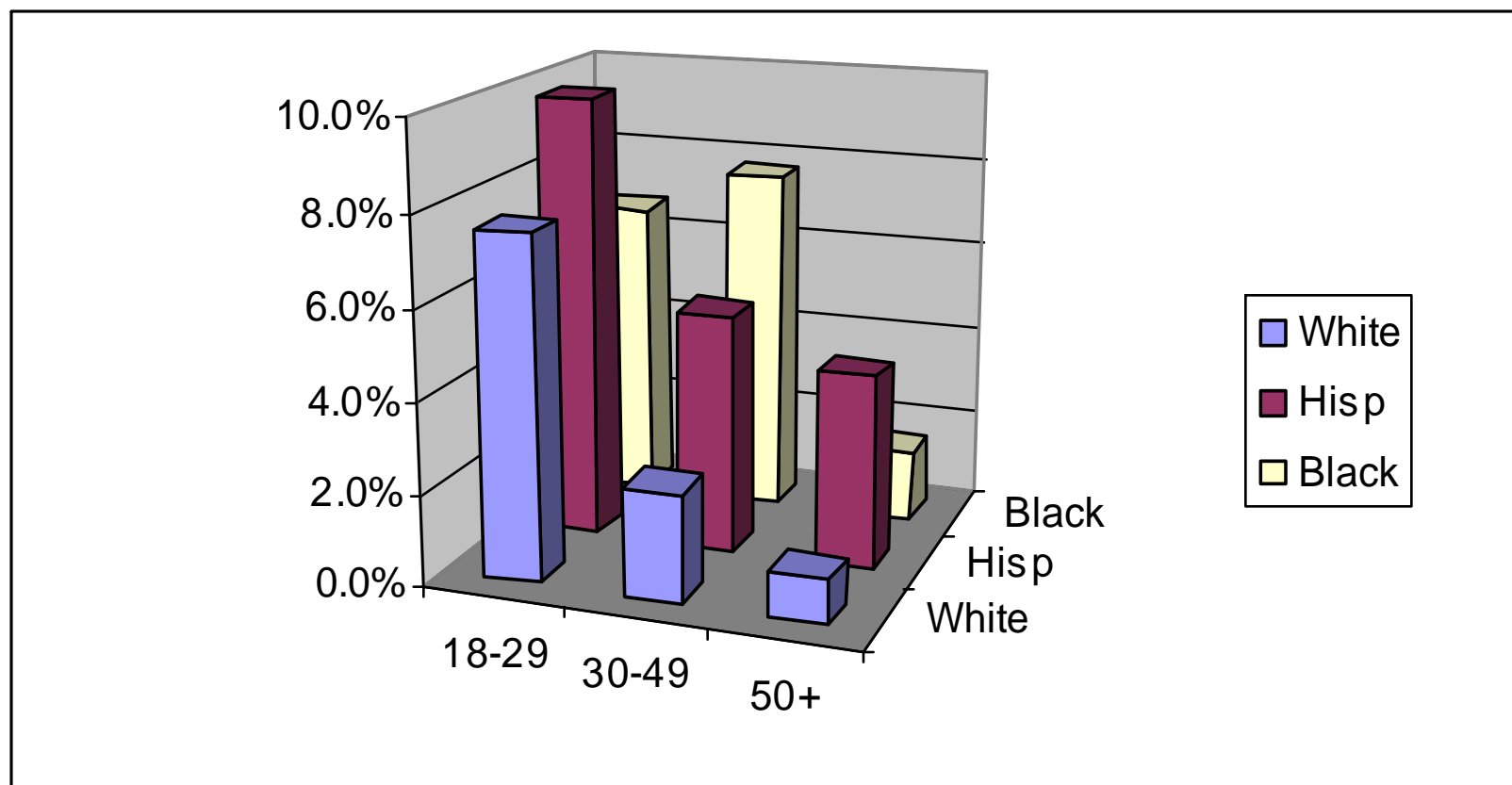
Number of Lifetime Consequences by Ethnicity in 2005



$F_{(7, 5375)} = 3.32, p = .002$

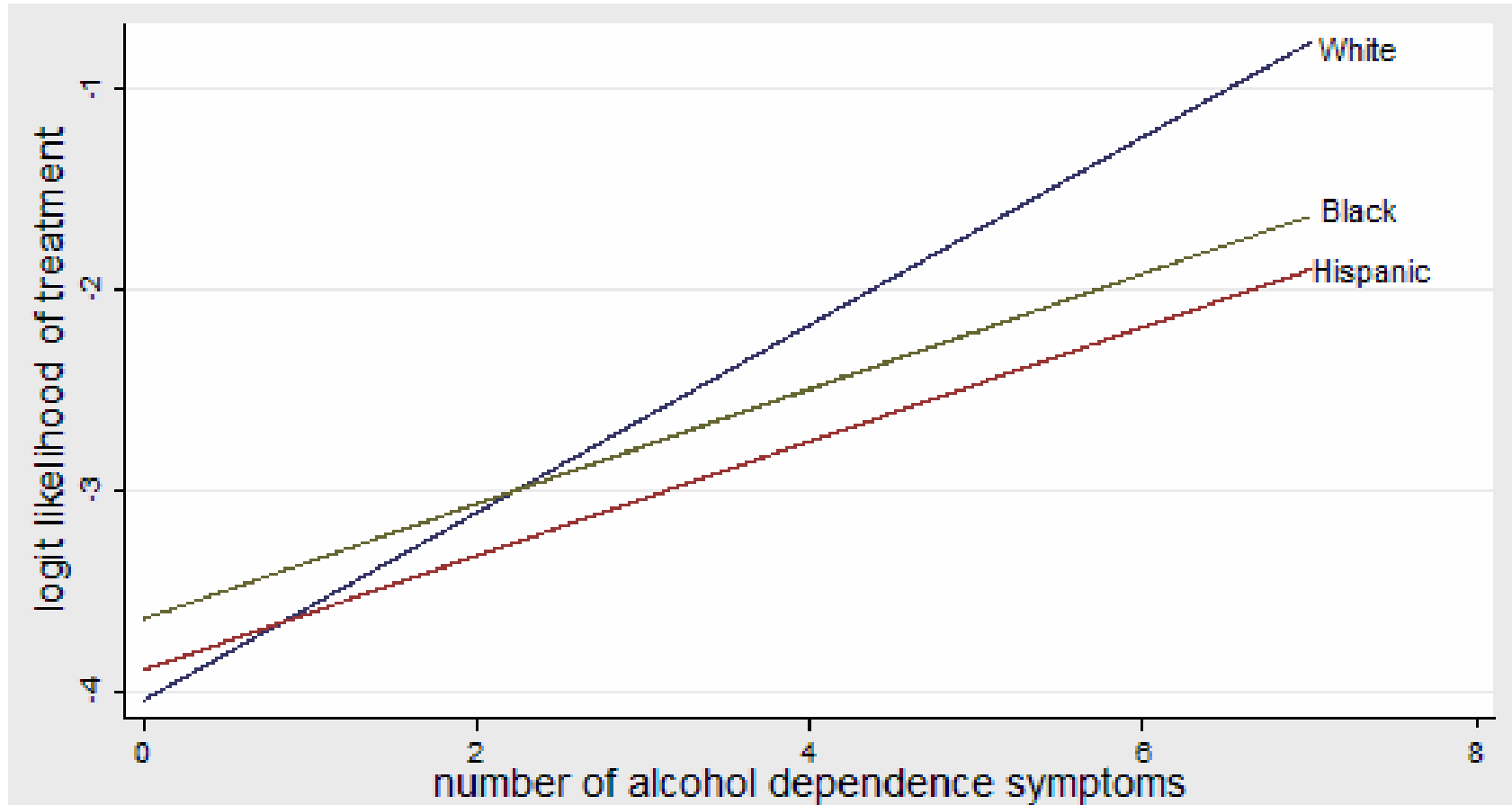
Source: 2005 National Alcohol Survey (weighted)

Males: DSM-IV Alcohol Dependence —Age by Ethnicity in 2005



Source: 2005 National Alcohol Survey (weighted)

Alcohol Problem Severity and Adjusted Probability of Lifetime Alcohol Services: US Adults with AUD*



*Adjusted for age, gender, marital status, education and social pressures

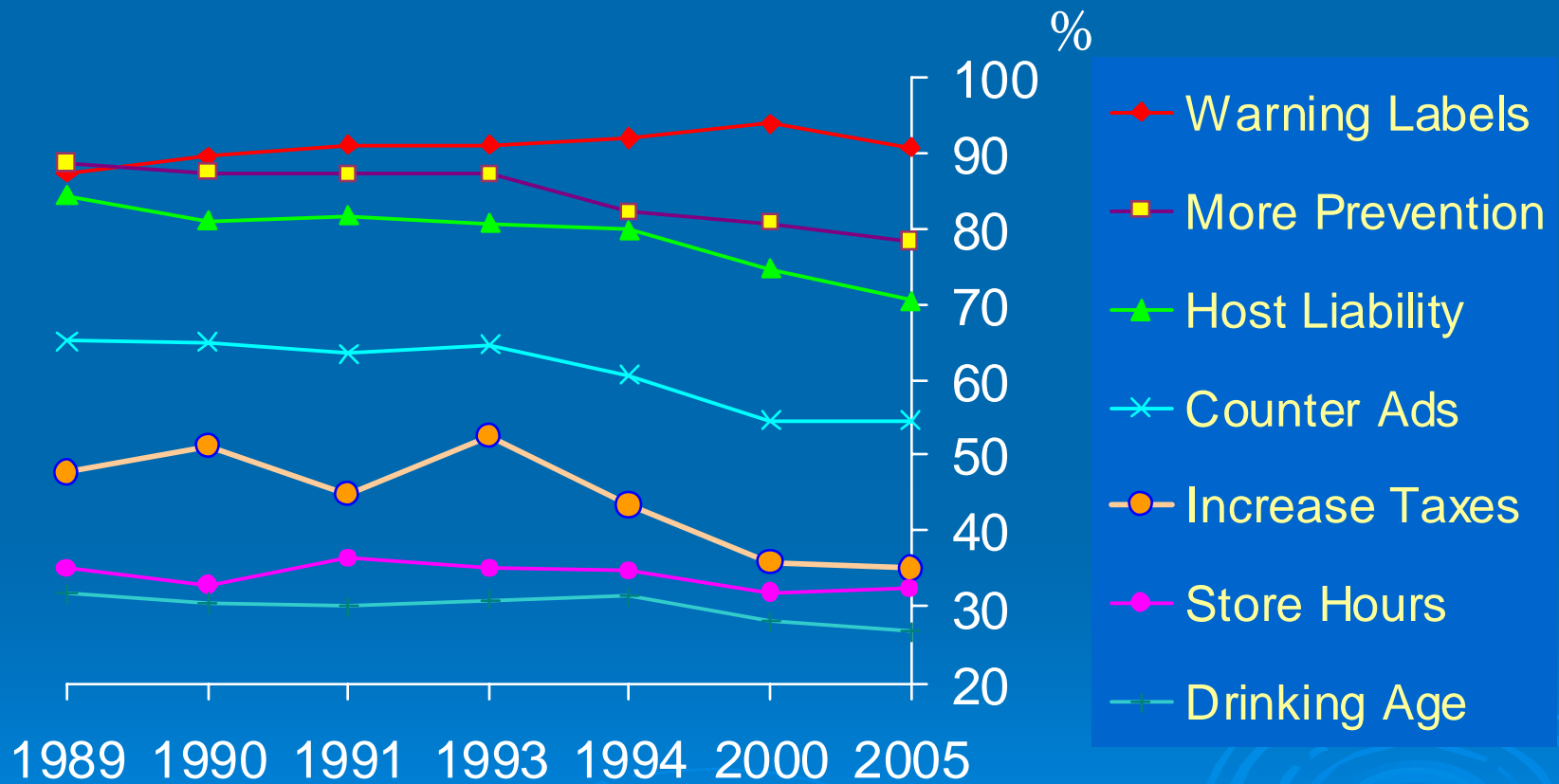
Schmidt, Ye, Greenfield & Bond *ACER* 31(1):48-56, 2007

Ratings of policy-relevant strategies and interventions

Policy - strategy	Effectiveness	Breadth of research support	Cross-cultural Testing	Cost to implement
Retail monopoly	+++	+++	++	Low
Restrict outlet density	++	+++	++	Low
Increase alcohol taxes	+++	+++	+++	Low
No service to intoxicated	+	+++	++	Moderate
Server liability	+++	+	+	Low
School programs	0	+++	++	High
Warning labels	0	+	+	Low
Min. legal purchase age	+++	+++	++	Low
Drivers <21 'zero tolerance'	+++	+++	++	Low
Brief intervention-at risk	++	+++	+++	Moderate

Source: Adapted from Babor et al, *Alcohol: No ordinary commodity* (Table 16.1), 2003

US Support Weakening for Stronger Alcohol Policies



Sources: Room et al, 1995; Giesbrecht & Greenfield, 1999; Greenfield et al, in press

Summary and Conclusions

- A wide range of legislative policies at various jurisdictional levels is currently being used to regulate alcohol commerce and people's drinking in the US.
- In the last 25 years, policy analyses and evaluations have demonstrated efficacy of model programs; implementation and sustainability studies are needed.
- Survey and aggregate statistics need to better account for new research on ethanol in beer, wine and spirits
- Policy development studies can reveal opportunities
- Global burden of disease studies and new studies can suggest strategies for choosing practical interventions