The Heart of the Problem:
Mass Media's Influence on Cardiovascular Disease

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September 19, 2002

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PROJECT GOALS

- **To report on the use of mass media in CVD prevention campaigns**
  - What has been done
  - Based on what theory
  - Producing what outcomes
  - Using what media
- **Make recommendations for future campaigns**

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THE FIRST PHASE

- The Stanford Three Community Project (1972+)
  - City 1: Control
  - City 2: Mass media (radio, tv, np, direct mail, billboard/banners)
  - City 3: Mass media and community intervention.
  - RESULTS:
    - Knowledge increases 6% in City 1; 27% in City 2; 41% in City 3.
    - Similar effect sizes in behavior change
- Initial Results of Second Phase Studies
  - Significant positive results in a number of studies

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THE SECOND PHASE

- The Stanford Five-City Project (1978+)
  - Both cohort and cross-sectional studies with surveys at baseline and year 2, 3/4, and 5 (6 post-baseline comparisons total)
  - RESULTS:
    - Positive increases in awareness
    - Positive increases in CVD knowledge in cross-sections
    - Small positive effects in cholesterol levels in 2 cohorts; no effect for other 4
    - Positive effects in blood pressure in most comparisons
    - Decrease in smoking in cohort but not in cross-sections
    - Decrease in BMI in one cross-sectional comparison
    - No effects for prevalence of CVD events
- Other Project Find Similar Results "positive effects within chance levels"
    - Minnesota Heart Health Program
    - North Karelia Project
    - Pawtucket Heart Health Program, and others

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SECOND PHASE:

WHY NULL EFFECTS?

- Strong Secular Trends, Over-Optimistic Effect Sizes for Study Design

Knowledge	Time 1	Time 2
Lowering cholesterol helps lower CVD risk [a]	64%	72
Reducing intake of fatty foods helps lower CVD risk [a]	66	72
Eating fewer high cholesterol foods helps lower CVD risk [a]	60	70
Heard of cholesterol [a]	77	81
Provided correct list of causes of high cholesterol [a]	70	75
Know that saturated fats primarily found in animal products [a]	55	60
Have checked cholesterol level [a]	35	46
Know own cholesterol level [a]	3	7
Knowledge test of 10 cholesterol items [b]	36	50
Dietary fiber can lower cholesterol [b]	32	76

[a] *From Schucker et al., 1987:*

[b] *From Frank et al., 1992*

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INTO THE THIRD PHASE:

WHERE TO GO FROM HERE?

- Three Key Factors to Consider:

  1. Studies primary media interventions designed with the "mass" in mind
  2. Strong secular trend concentrated in upper education brackets other measures typical to high SES
  3. Study designs similarly designed with "mass" in mind

- KEYS TO SUCCESSFUL FUTURE CAMPAIGNS:
  - Greater Understanding of Health Communication Theory/Social Marketing Theory
  - Research-Based Market Segmentation
  - Knowledge of Media Options
  - Understanding of Mass Media Capabilities

THEORETICAL FOUNDATION

The Transtheoretical Model

- Focuses on importance of recognizing each person resides in a potential state of change:
  - Precontemplation: can't see problem, need consciousness raising
  - Contemplation: aware, thinking about it, need self-environmental evaluation
  - Preparation: has intention, preliminary steps, self-liberation
  - Action: behavior modification up to 6 months, needs counterconditioning
  - Maintenance: over six months, needs reinforcement management

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THEORETICAL FOUNDATION

The Social Marketing Theory

- The marketing of the human condition like product marketing
- Seven steps:

1. Problem definition
2. Goal setting
3. Target segmentation
4. Consumer analysis
5. Influence channels analysis
6. Marketing strategy and tactics
7. Evaluation

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AUDIENCE ANALYSIS:
WHO NEEDS WHAT MESSAGE?

- Most research done on ethnicity, less by education
  - Ethnic minorities and those with lower educational attainment (separate effects) generally lower in overall awareness, knowledge, and enactment of behaviors
- Lifestyle analysis
  - Cluster individuals by demographics, knowledge, attitudes and behaviors into distinct classifications

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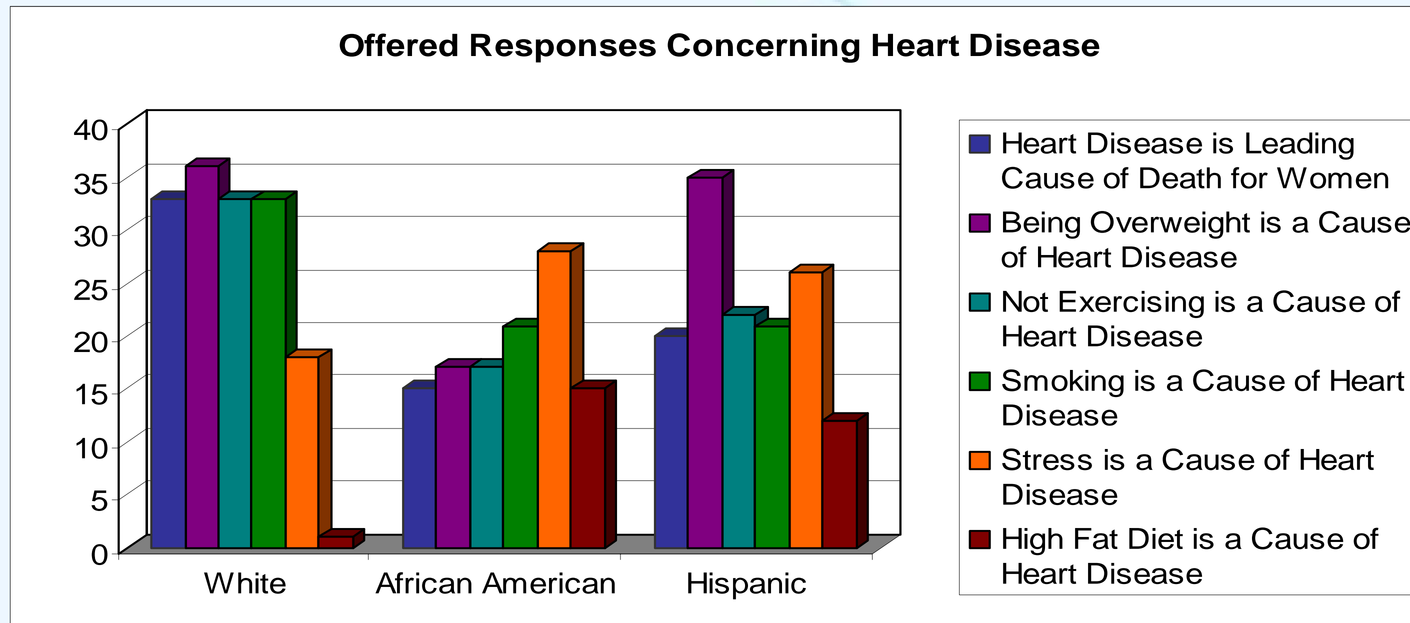
AUDIENCE ANALYSIS:
AWARENESS AND KNOWLEDGE



Mosca et al., 2000

- Focus groups:
  - Prevention as avoiding rather than enacting
  - High blood pressure as stress and worries
  - CVD a "quick" illness
  - Definition of exercise
  - Hypertension misunderstood

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AUDIENCE ANALYSIS:

BEHAVIOR

Significant Odds Ratios on CVD Risk Factor Outcomes						
	Smoking	Hypertension	Obesity	Inactivity	High Cholesterol	Diabetes
WOMEN						
Each year of Education	.85	.94	.93	.84	.95	.93
Black vs. White		2.86	1.92	2.26		
Hispanic vs. White	.19		1.48	1.63		
Each Year of Age	.97	1.1	1.02	1.02	1.08	1.06
MEN						
Each year of Education	.83		.95	.83		.92
Black vs. White	1.27	1.9		1.4		1.9
Hispanic vs. White	.37					
Each Year of Age	.98	1.07	1.03	1.02	1.04	1.06

Winkleby et al., 1999

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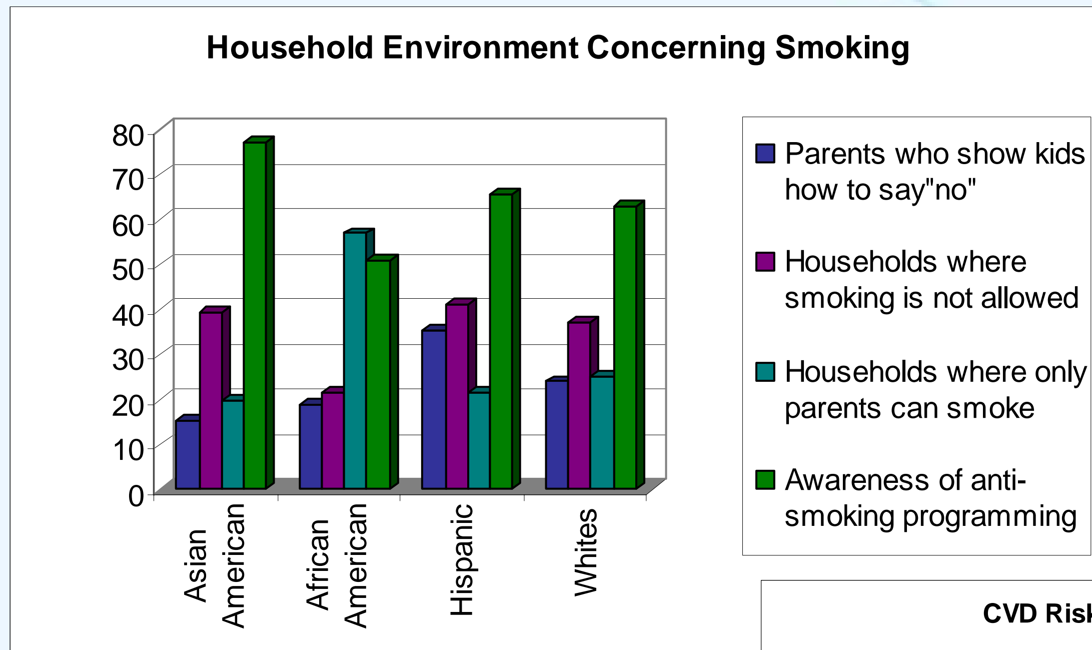
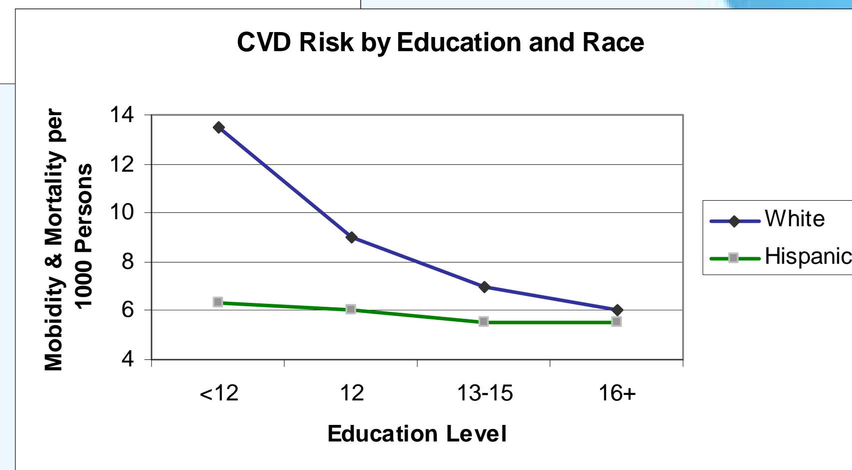
AUDIENCE ANALYSIS:

BEHAVIOR



Koepke, Flay and Johnson., 1990



Ribisl et al., 1998

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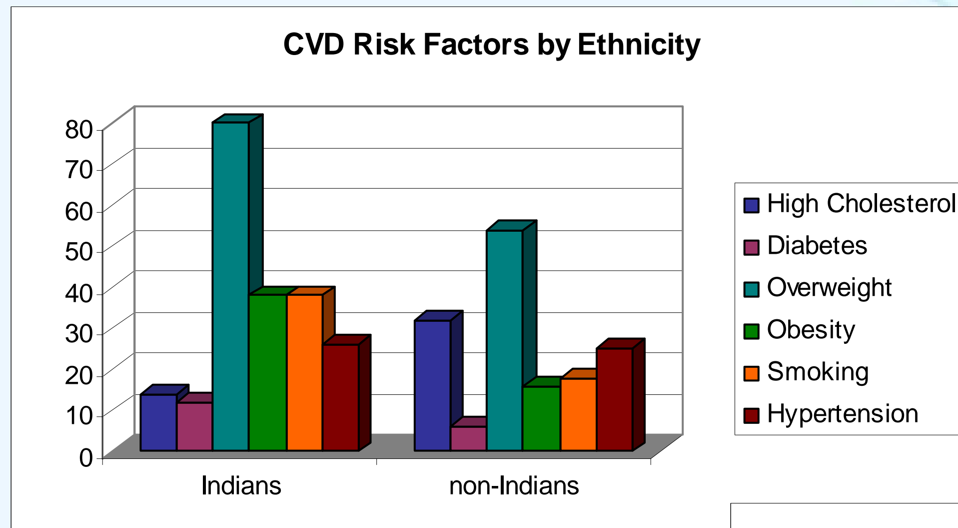
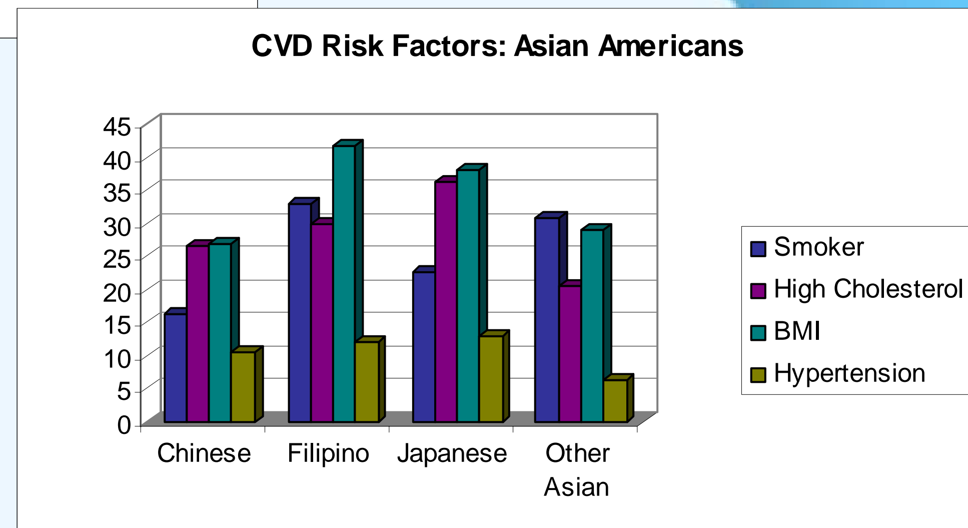
AUDIENCE ANALYSIS:

BEHAVIOR



Harwell et al., 2001



Klatsky & Armstrong., 1991

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AUDIENCE ANALYSIS:

LIFESTYLES

	Healthful Adults	Unhealthful Adults	Worried Older Adults	Healthful Talkers	Healthful Young Adults	Unhealthful Young Adults	Young Athletes
Income	24	21	**16**	24	12	17	25
Years Education	14	13	11	**34**	14	**9**	10
Female	**70**	40	**59**	50	27	**57**	25
Married	81	**59**	77	**63**	20	21	18
Hispanic		9	**14**	7	3	**27**	18
Healthy Diet	0.57	**-0.38**	**-0.29**	0.36	0.31	**-0.58**	
High Exercise	-0.34		**-0.4**	0.34	0.52		3.54
Walking	0.37		**-0.29**	0.25	0.31	**-0.58**	
Nonsmoking	0.34	**-1.2**			0.43	0.42	0.31
Discussion			**-0.41**	3.35		**-0.41**	
Peer Behavior	0.3	**-0.5**			0.3		
Percieved Risk		0.25	0.36		**-0.42**	**-0.39**	**-0.39**
Will Change	0.32	**-0.44**			0.3	**-0.3**	
CVD Preventable			**-0.38**	0.44	0.34	**-0.76**	
CVD Knowledge			**-0.34**	0.4	0.29	**-0.25**	
Can Change Diet	0.47	**-0.43**		0.32	0.32		
Can Exercise			**-0.68**	0.26	0.68		0.89

Slater and Flora., 1991

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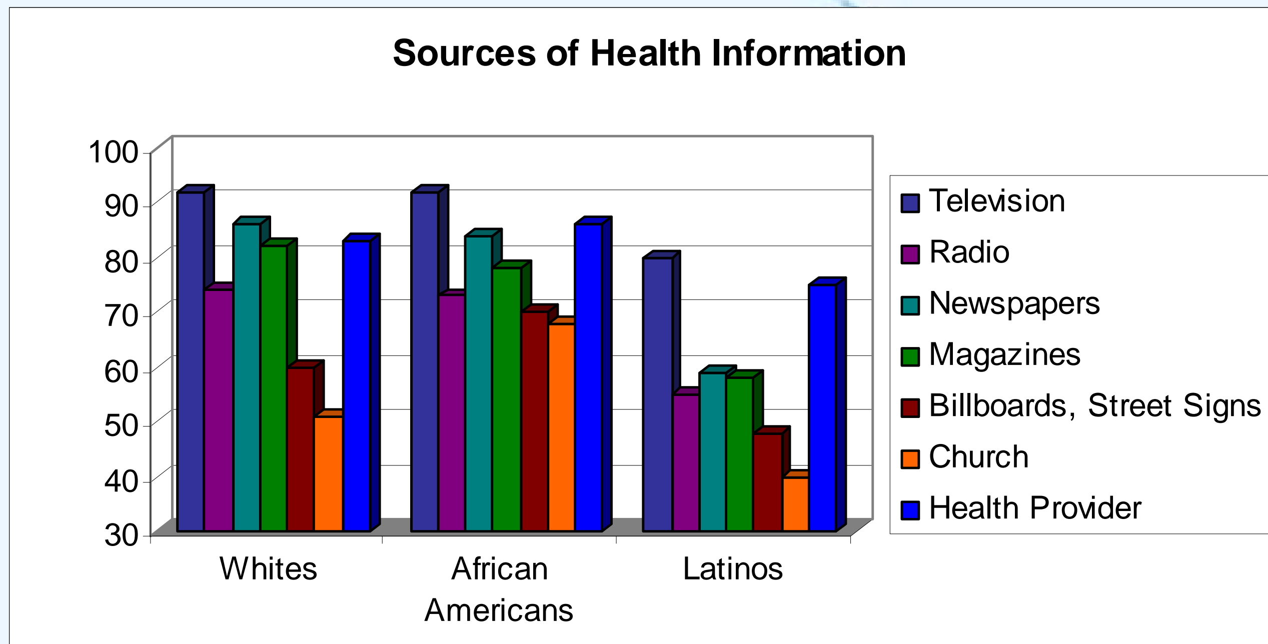
MEDIA CONSUMPTION PATTERNS



Brodie et al., 1999

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RECOMMENDATIONS:

WHAT THE MEDIA SHOULD DO

- Raise awareness of CVD, its prevalence, and impact
- Increase knowledge about what leads to CVD
- Increase knowledge as to who is at risk and why
- Increase knowledge on what is necessary to reduce the risk of CVD
- Increase knowledge on what constitutes a healthy diet and acceptable exercise
- Increase awareness of available programs
- Selectively target to increase self-efficacy
- Selectively target to increase perceived risk
- Model CVD best practices
- All targeting those who most need boosts in awareness and knowledge

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RECOMMENDATIONS:
WHAT MESSAGES SHOULD BE PUT FORWARD?

- **Caucasian Populations:** Increase awareness that CVD is the number one killer, especially among women; continue anti-smoking campaigns, especially targeted to low-income
- **African American Populations**: Increase awareness of the leading causes of CVD; increase knowledge about smoking practices; disseminate information about support groups; provide knowledge about healthy ethnic cuisine
- **Hispanic Populations:** Non-English awareness on CVD, specifically cholesterol and obesity; increase awareness of CVD risk factors; disseminate information about support groups and healthy ethnic food choices
- **Indian American Populations:** Increase awareness that CVD is a serious risk and of CVD risk factors; disseminate information on smoking cessation
- **Asian Americans:** Increase knowledge of CVD risk by specific Asian ethnicity

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RECOMMENDATIONS:

WHAT MESSAGES SHOULD BE PUT FORWARD?

- **Unhealthful Adults:** Increase self-efficacy to change diets; increase awareness of ways to cope with quitting smoking when peers continue to smoke; messages designed to wear down a generalized resistance to change
- **Worried Older Adults:** Increase knowledge of CVD, CVD risk factors, and that CVD is preventable; increase awareness of exercise options and programs; encouragement to discuss health with friends and family; increase knowledge of what constitutes healthy foods, where to get them and where to get assistance learning how to change one's diet
- **Unhealthful Young Adults:** Increase knowledge of CVD, CVD risk factors, and that CVD is preventable; increase awareness of exercise options and programs; messages that increase their perceived risk
- **Older Primed Adults:** Increased information on programs that fit their age category that are aimed to increase fitness and diet; increased knowledge of blood pressure lowering strategies and encouragement to see a doctor concerning blood pressure

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RECOMMENDATIONS:

WHAT MEDIUM?

- **Television:** Critical for raising awareness and knowledge: Use cable to target specific populations; Use differential network consumption patterns to target by ethnicity
- **Radio:** Excellent for lifestyle and ethnic specialization; poor recall
- **Newspapers:** Limit to community and specialty newspapers
- **Billboards, bus banners, etc:** Excellent for geographical segmentation
- **Direct mail:** Also excellent geographically
- **Message construction:** Know you audience!

SUMMARY

1. Employ Social Marketing techniques, especially segmentation
2. Understand capabilities and limitations of mass media
3. Combine mass media with community intervention
4. Move people up the stages of change, one at a time
5. Employ experts of the target media markets