



# The association between various components of media literacy and adolescent smoking

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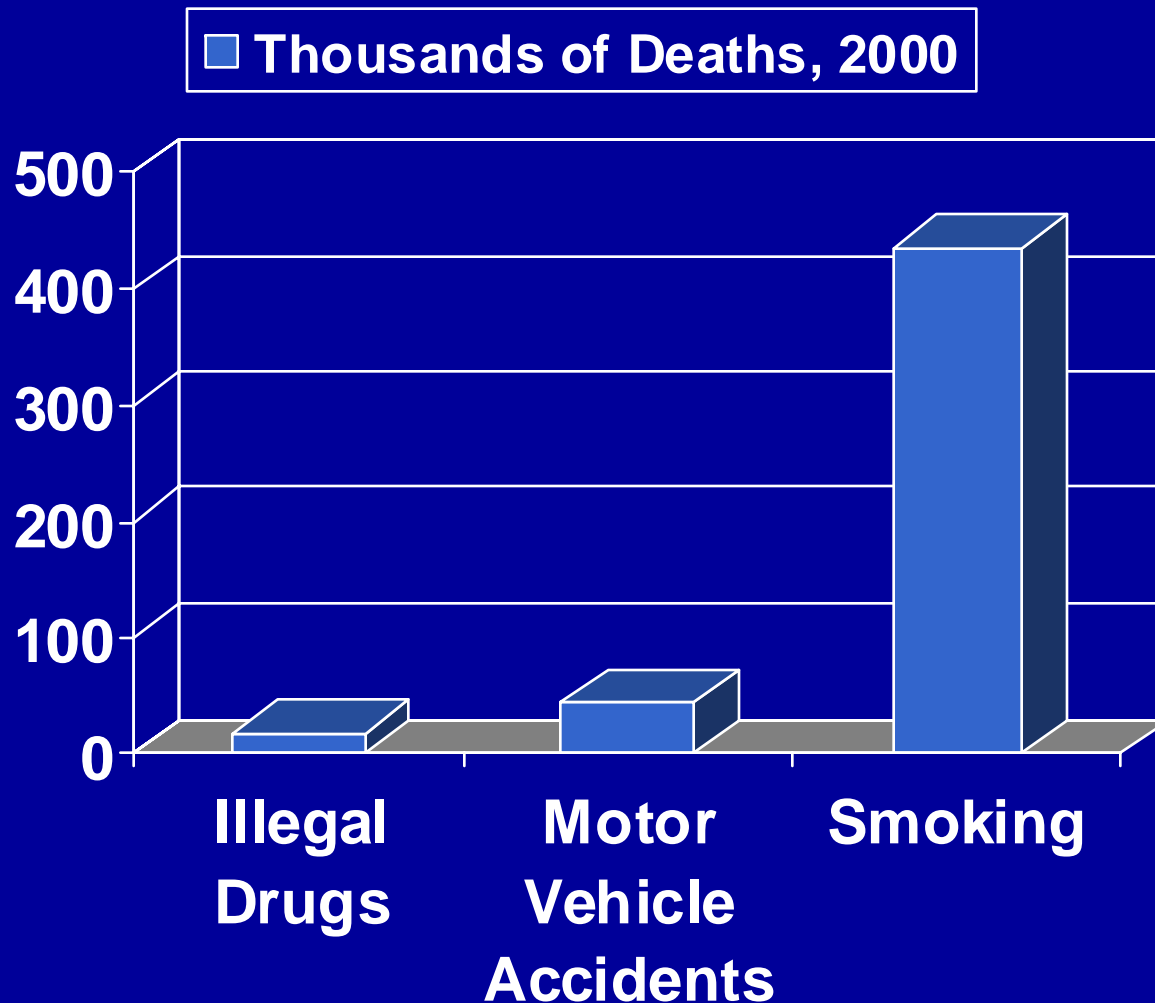
# Funding Disclosures

- National Cancer Institute (K07-CA114315)
- Robert Wood Johnson Foundation  
(Physician Faculty Scholar Award)
- Maurice Falk Foundation

# Acknowledgments

- Renee Hobbs, EdD
- Michael J. Fine, MD, MSc
- Madeline A. Dalton, PhD
- Melanie A. Gold, DO
- Carl I. Fertman, PhD, MBA, CHES
- Galen Switzer, PhD

# Smoking is the leading cause of total US morbidity and mortality

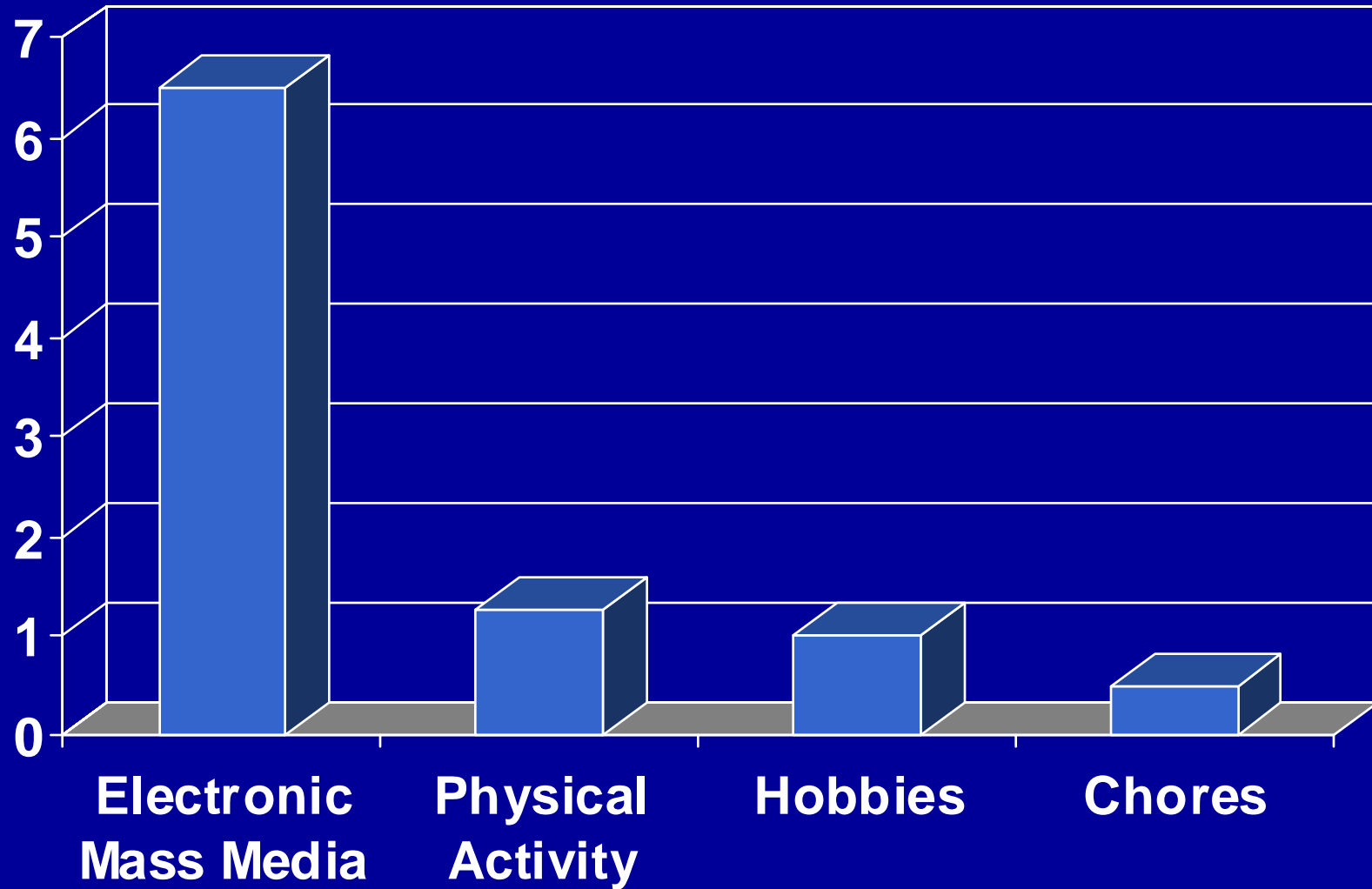


Mokdad, 2004

# Smoking begins in adolescence

- 89% of adults who die from smoking started smoking at 18 or under (CDC, 1994)
- Every day 6000 adolescents 17 or under try their first cigarette (CDC, 1998)

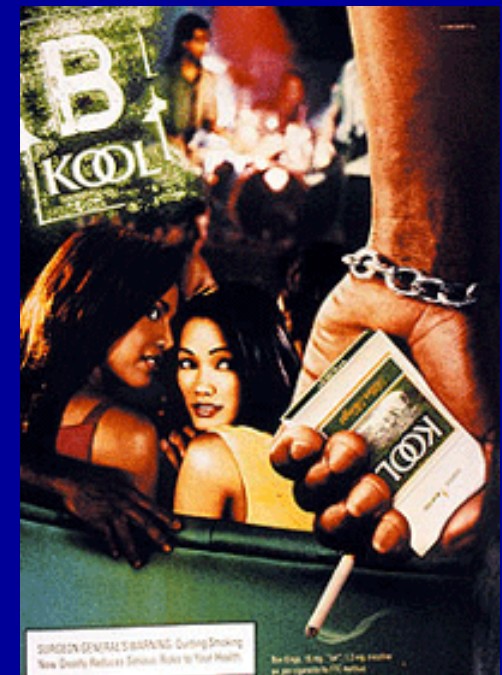
# Hours per day spent by adolescents



Kaiser Family Foundation, 2005

# Viewing smoking related messages increases the likelihood of smoking

- Movies (Dalton/Sargent, 2000-2006)
- Advertising and promotions (Pierce, 1996-1998)

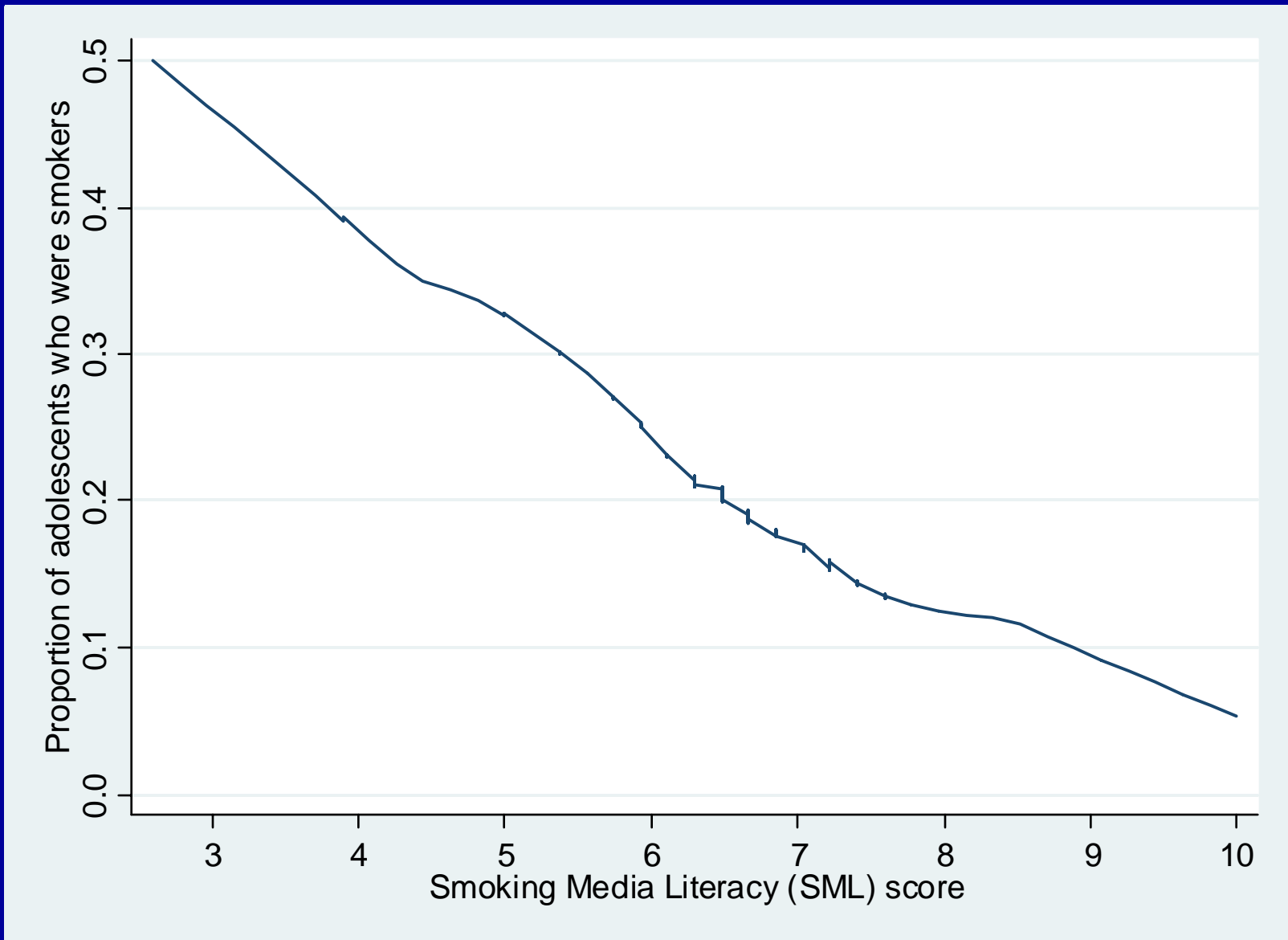


# “Media literacy”

- Ability to analyze and evaluate mass media messages (Buckingham, 2003)
- Recommended to buffer the impact of mass media messages on smoking (CDC, 1996; AAP, 1999)



# SML versus Current Smoking



# Odds of smoking based on SML\* (Multivariate)

	OR (95% CI)
SML 1 point higher	0.78 (0.65-0.94)
SML Q1† (vs Q1)	1
SML Q2 (vs Q1)	0.88 (0.49-1.60)
SML Q3 (vs Q1)	0.49 (0.27-0.91)
SML Q4 (vs Q1)	0.40 (0.19-0.82)

\* **SML = Smoking Media Literacy**

† **Q = Quartile**

# Multi-Factorial Nature

- Authors and Audiences
- Meanings and Messages
- Representation and Reality

# Authors & Audiences

- Tobacco companies are very powerful, even outside of the cigarette business
- Certain cigarette brands are designed to appeal to younger people

# Messages & Meanings

- Cigarette ads link smoking to natural things that humans want like love, good looks, and power
- Two people may see the same movie or TV show and get very different ideas about it
- People are influenced by advertising
- When people make movies and TV shows, every camera shot is very carefully planned

# Representation & Reality

- When you see a “buy-one-get-one-free” cigarette deal, it’s usually not actually a good deal in the long run
- Advertisements usually leave out a lot of important information

# Purpose & Hypothesis

- Purpose: To determine the association between *specific constructs* of Smoking Media Literacy and measures of smoking
- Hypothesis: Smoking would be most associated with the “Author-Audience” realm of media literacy

# Methods



# Participants/procedures

- Administered 30-minute confidential questionnaire during social studies classes
- All students at a large suburban high school, enrollment 1690

# Dependent Variables

- Current smoking (30-day)
- Susceptibility to smoking
  - Three item scale with excellent predictive validity (Pierce, 1996)
  - An individual is “susceptible” with any response indicating a lack of a firm commitment not to smoke

# Independent Variable

- Smoking Media Literacy (reliable and validated 18-item scale; Primack, 2006)
  - 120 items developed based on theoretical model
  - 51 items remained after review by experts; focus group testing
  - 18 final items identified using factor analysis

# Demographic Covariates

- Age
- Race
- Ethnicity
- Sex
- Socioeconomic status

# Environmental Covariates

- Responsive parenting
- Authoritative parenting
- Parent smoking
- Sibling smoking
- Friend smoking
- Electronic media use
- Stress

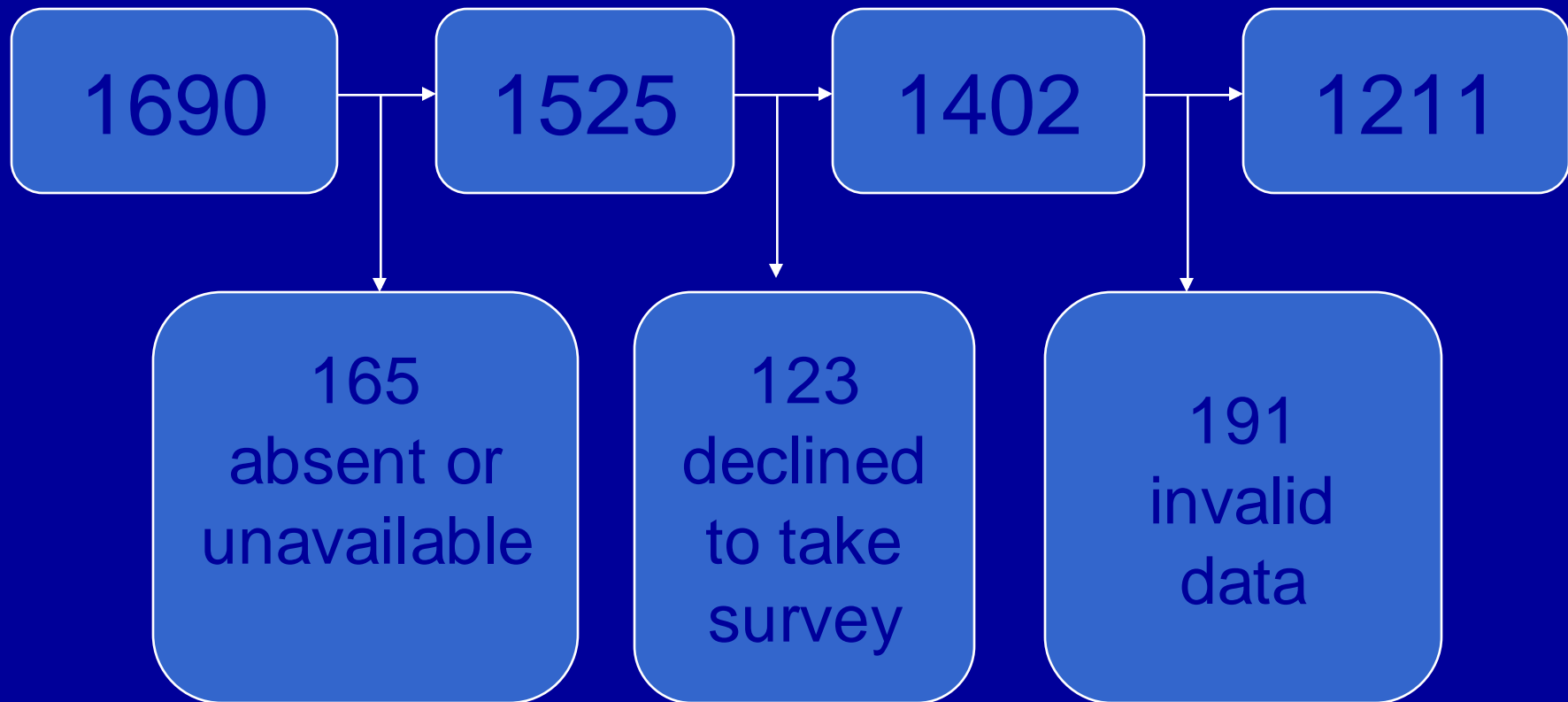
# Intrinsic Covariates

- Grades
- Depression
- Self esteem
- Tobacco knowledge
- Rebelliousness
- Sensation seeking

# Analysis

- Multiple logistic regression to determine the odds of smoking/susceptibility
- Controlled for all variables with univariate associations with smoking/susceptibility

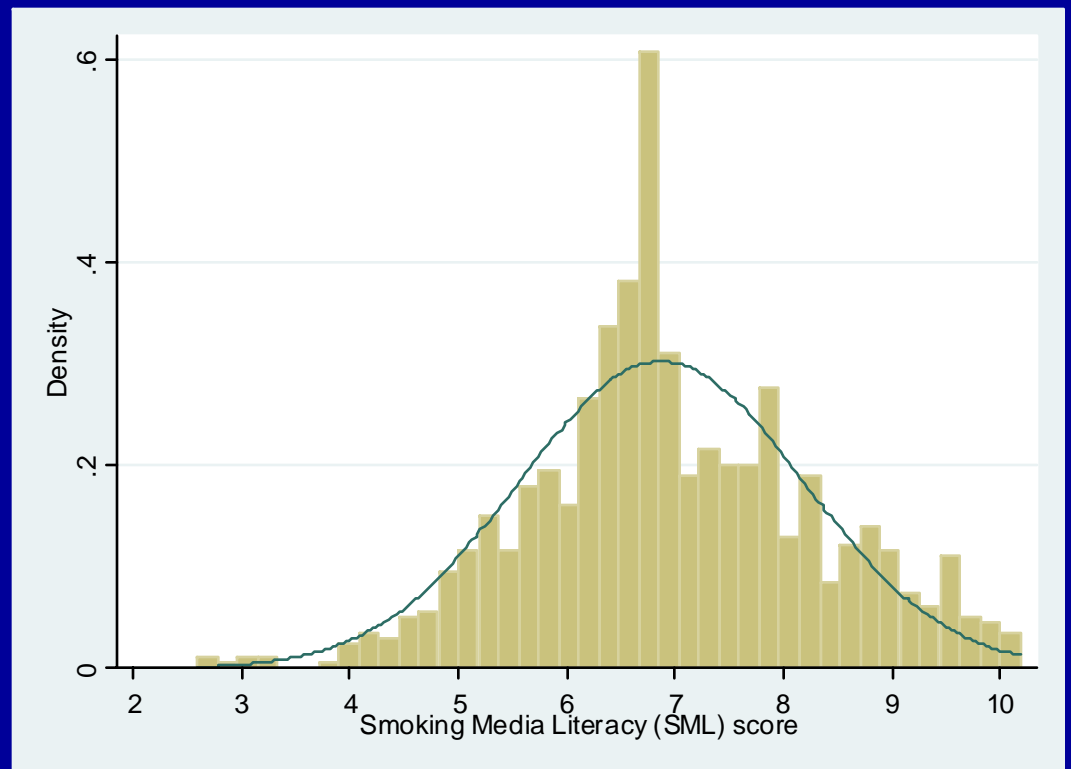
# Sample determination





# Sample characteristics

- 48% male
- 92% Caucasian
- 19% current smokers
- 40% of non-smokers susceptible to smoking



# Results

Item	Related Core Concept	OR (95% CI) for Smoking, Adjusted
“Buy-one-get-one-free” deals on cigarettes are designed to get people addicted	AA1	0.82 (0.64, 1.05)
Tobacco companies are very powerful, even outside of the cigarette business	AA1	1.34 (1.01, 1.78)*
Tobacco companies only care about making money	AA1	0.80 (0.60, 1.07)
Certain cigarette brands are designed to appeal to younger people	AA2	1.01 (0.76, 1.35)

Item	Related Core Concept	OR (95% CI) for Smoking, Adjusted
Wearing a shirt with a cigarette logo on it makes you into a walking advertisement	MM1	0.95 (0.73, 1.23)
Cigarette ads link smoking to natural things that humans want like love, good looks, and power	MM1	0.86 (0.66, 1.11)
Two people may see the same movie or TV show and get very different ideas about it	MM2	1.13 (0.79, 1.61)
Different people can see the same cigarette ad in a magazine and feel completely differently about it	MM2	1.28 (0.94, 1.73)
A tobacco billboard may catch one person's attention but not even be noticed by another person	MM2	1.00 (0.73, 1.38)

<b>Item</b>	<b>Related Core Concept</b>	<b>OR (95% CI) for Smoking, Adjusted</b>
People are influenced by TV and movies, whether they realize it or not	MM3	0.86 (0.65, 1.14)
People are influenced by advertising	MM3	0.92 (0.67, 1.24)
When people make movies and TV shows, every camera shot is very carefully planned	MM4	0.94 (0.68, 1.30)
There are often hidden messages in cigarette ads	MM4	0.73 (0.56, 0.96)*

Item	Related Core Concept	OR (95% CI) for Smoking, Adjusted
Most movies and TV shows that show people smoking make it look more attractive than it really is	RR1	0.76 (0.59, 0.99)*
Cigarette ads show green, natural, healthy scenes to make people forget about the health risks	RR1	0.59 (0.45, 0.78)*
When you see a “buy-one-get-one-free” cigarette deal, it’s usually not actually a good deal in the long run	RR1	0.66 (0.51, 0.86)*
When you see a smoking ad, it is very important to think about what was left out of the ad	RR2	0.71 (0.55, 0.93)*
Advertisements usually leave out a lot of important information	RR2	0.60 (0.45, 0.79)*

Item	Related Core Concept	OR (95% CI) for Susceptibility, Adjusted
“Buy-one-get-one-free” deals on cigarettes are designed to get people addicted	AA1	0.91 (0.74, 1.17)
Tobacco companies are very powerful, even outside of the cigarette business	AA1	0.65 (0.52, 0.83)*
Tobacco companies only care about making money	AA1	0.59 (0.45, 0.76)*
Certain cigarette brands are designed to appeal to younger people	AA2	0.74 (0.58, 0.96)*

Item	Related Core Concept	OR (95% CI) for Susceptibility, Adjusted
Wearing a shirt with a cigarette logo on it makes you into a walking advertisement	MM1	0.69 (0.55, 0.86)*
Cigarette ads link smoking to natural things that humans want like love, good looks, and power	MM1	0.87 (0.70, 1.08)
Two people may see the same movie or TV show and get very different ideas about it	MM2	0.68 (0.51, 0.91)*
Different people can see the same cigarette ad in a magazine and feel completely differently about it	MM2	0.63 (0.49, 0.81)*
A tobacco billboard may catch one person's attention but not even be noticed by another person	MM2	0.67 (0.51, 0.87)*



Item	Related Core Concept	OR (95% CI) for Susceptibility, Adjusted
People are influenced by TV and movies, whether they realize it or not	MM3	0.98 (0.76, 1.25)
People are influenced by advertising	MM3	0.77 (0.60, 0.98)*
When people make movies and TV shows, every camera shot is very carefully planned	MM4	0.58 (0.48, 0.75)*
There are often hidden messages in cigarette ads	MM4	0.83 (0.65, 1.05)

Item	Related Core Concept	OR (95% CI) for Susceptibility, Adjusted
Most movies and TV shows that show people smoking make it look more attractive than it really is	RR1	0.96 (0.78, 1.18)
Cigarette ads show green, natural, healthy scenes to make people forget about the health risks	RR1	0.70 (0.55, 0.89)*
When you see a “buy-one-get-one-free” cigarette deal, it’s usually not actually a good deal in the long run	RR1	0.63 (0.51, 0.79)*
When you see a smoking ad, it is very important to think about what was left out of the ad	RR2	0.68 (0.55, 0.85)*
Advertisements usually leave out a lot of important information	RR2	0.65 (0.51, 0.83)*

# Conclusions

- Smoking outcome
  - Most related to representation/reality items
  - Increased with one author/audience item (power of tobacco industry)
- Susceptibility outcome
  - Related equally to each of the domains of media literacy
  - 13 of 18 items

# Implications

- Different aspects of media literacy may be appropriate to different populations
  - All domains to naïve smokers
  - Focus on representation/reality for established smokers
- Think about unintended consequences

# Limitations

- Homogeneity of sample
  - Race
  - Ethnicity
  - One school
- Cross-sectional design
- Self-report

# Future Directions

- Longitudinal studies
- Other media associated issues
  - Obesity
  - Alcohol abuse
  - Suicide
  - Anxiety
  - Eating disorders
  - Violence

Thank You.

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# Other Scale Items



# Susceptibility to Smoking (Intention to Smoke)

- Pierce, 1996
- I expect to smoke a cigarette sometime in the next year.
- I expect to smoke a cigarette soon.
- If my best friend offered me a cigarette, I would probably smoke it.

# Parenting

- Demanding: Wants to know where I am
- Responsive: Listens to what I have to say
- Jackson C, Henriksen L, Foshee VA. The Authoritative Parenting Index: predicting health risk behaviors among children and adolescents. *Health Educ Behav* 1998; **25**: 319–37.