




Smoking in a Sexual Minority Adolescents: A Comparison of Two Cohorts

Stephen S. Michael, MS

Doctoral Candidate

Zuckerman College of Public Health



Context – Why This Topic?

- Volunteered at a local youth center for LGBTQ and Homeless youth for 2 years.
- Complete staffing change occurred at the center.
 - Noticed an increase in smoking within the population.
 - Conducted a focus group with youth and completed evaluation of center after an significant increase in smoking was observed
- Youth encouraged looking into a question: Has smoking in sexual minority youth really changed?

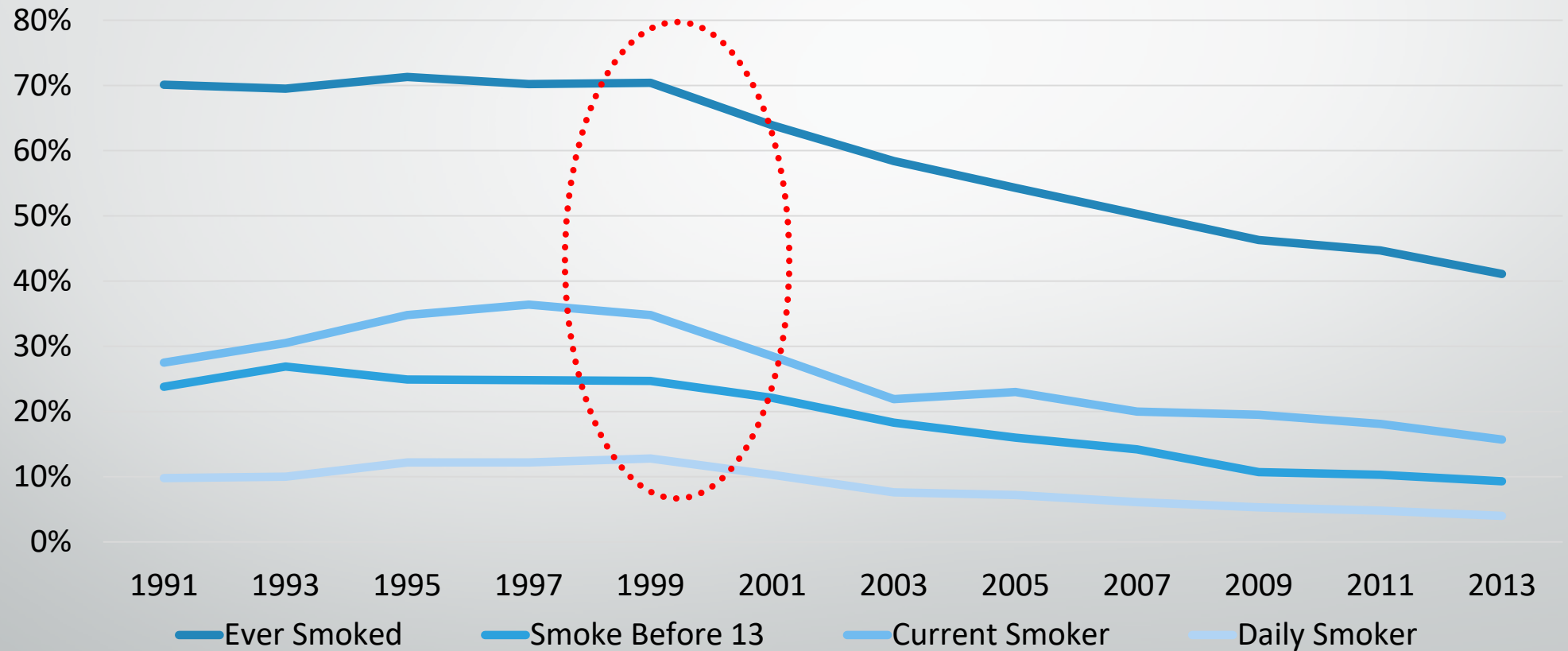
Purpose of the Study

Two-fold:

- Assess patterns in smoking behaviors of sexual minority youth at two times separated by 2 decades (1994 and 2013) to identify if the disparity between these youth and their heterosexual peers is different and whether the decrease in smoking behaviors in the general adolescent populations is mirrored in sexual minority youth.
- Examine smoking behaviors of current smokers in the populations and assess whether smoking behaviors in sexual minority youth are different from each other and whether smoking behaviors at each time period are different between sexual minority youth and their heterosexual peers.

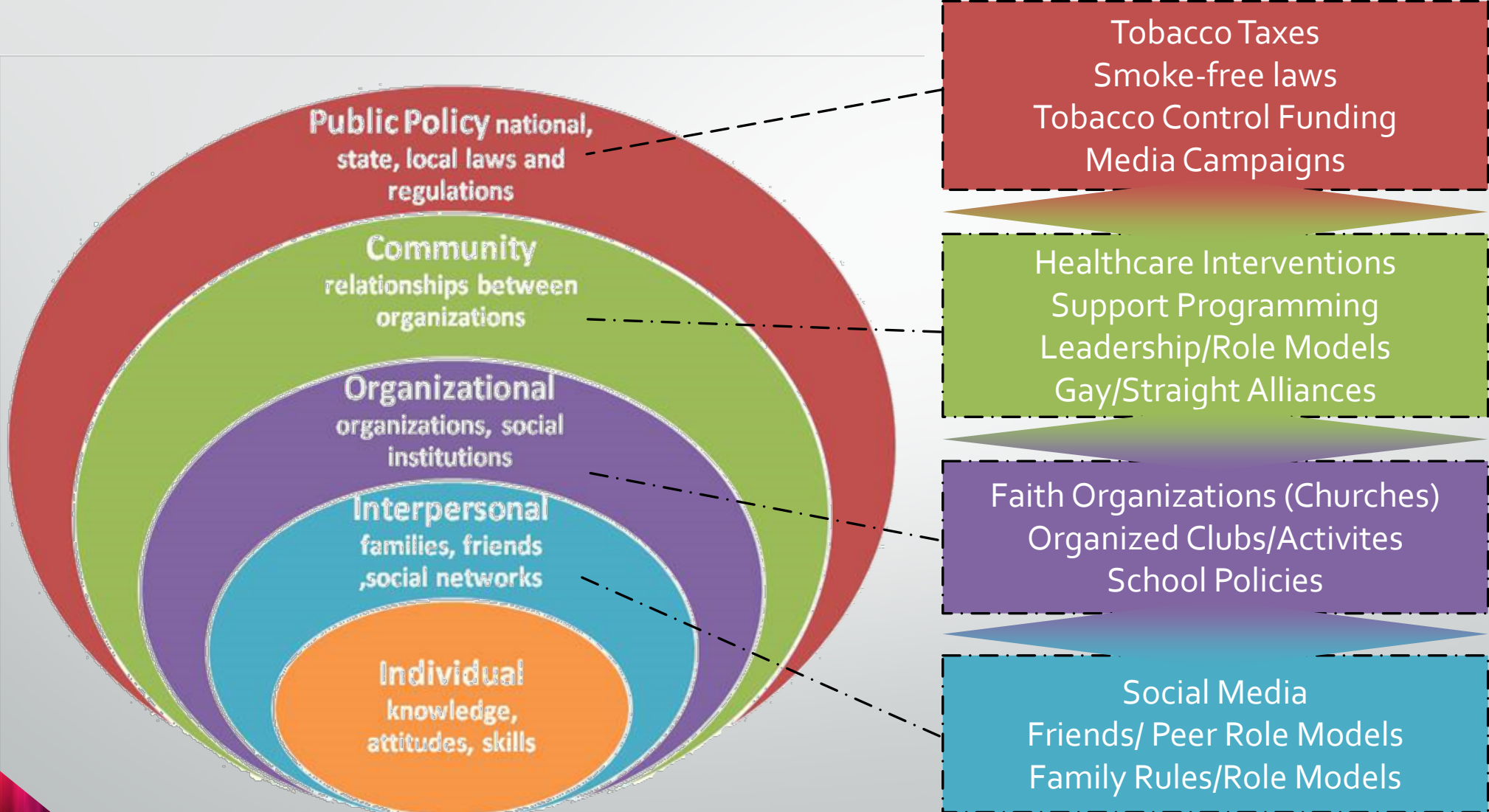
What Do We Know?

Adolescent Smoking Behaviors 1991-2013



Source: CDC, Trends in the Prevalence of Tobacco Use National YRBS: 1991—2013

Public Health Perspective



Ecological Model



Who is a Sexual Minority?

(For this Study)

Those who have an attraction to or sexual contact with people of the same sex and/or both sexes or a sexual identity of gay/lesbian or bisexual.

Literature Reviews

3 Large Scale Literature Reviews related to smoking and sexual minority youth:

- Ryan, et. al. (2001) – Sexual minority youth smoking prevalence up to 36% greater than general population of adolescents.
- Lee, et. al. (2009) – Sexual minority youth smoking prevalence 1.5-2.5 times greater than heterosexuals.
- Blosnich, et. al. (2011) – Risk factors associated with smoking are similar for sexual minority and heterosexual adolescents, but the magnitude of the association is greater for sexual minority youth. Common risk factors included lower educational attainment, alcohol use and depression.



Challenges with Previous Studies

- Small sample sizes and often with focused subpopulations (gay men, lesbians, bisexual latinos, etc.) making generalizability difficult but more specific.
- Many studies are adult or combined adult/adolescent.
- Studies often combined different samples to achieve power enough to conduct analyses.

Two Key Questions

- *Are the smoking behaviors of sexual minority youth different from their heterosexual peers **within** the two populations?*
- *Are smoking behaviors **between** the two populations different for sexual minority youth and heterosexual youth?*

The Survey Populations

High School Students (grade 9-12)

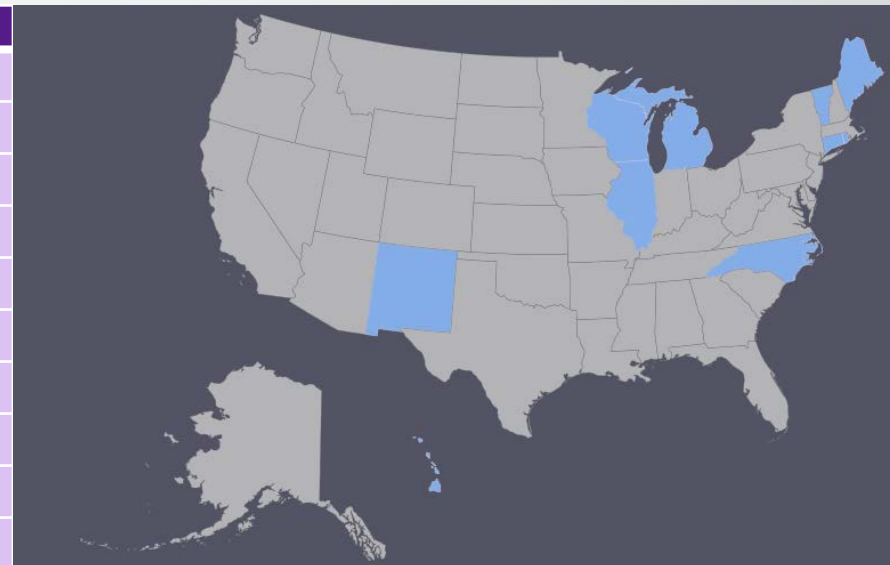
- [The National Longitudinal Study of Adolescent to Adult Health \(Add Health\)](#)

- Wave 1 – 1994 school year
- 20, 772 In-home surveys

- [Youth Risk Behavior Survey](#)

- Spring 2013
- 37,822 surveys (10 States)

YRBS States
Connecticut (CT)
Hawaii (HI)
Illinois (IL)
Maine (ME)
Michigan (MI)
New Hampshire (NH)
New Mexico (NM)
North Carolina (NC)
Rhode Island (RI)
Wisconsin (WI)





Sexual Minority Defined in Each Survey

Add Health

- Those who reported any romantic attraction to a person of the same-sex or both sexes and those who reported sexual contacts of the same-sex or both sexes.

YRBS

- Those who reported a sexual identity of gay/lesbian or bisexual and those who reported sexual contacts of the same sex or both sexes. Added those who reported a sexual identity of unsure who also reported sexual contact with same sex or both sex partners.



Smoking Behaviors Studied

- Ever Smoked (tried a cigarette, even one puff)
- First Cigarette Before 13 (smoked first cigarette before age 13)
- Current Smoker (smoked at least once in the last 30 days)
- Frequent Smoker (smoked at least 20 of the last 30 day)
- Daily Smoker – broken into two variable
 - Current Daily Smoker (smoked every day the last 30 days)
 - Ever Been a Daily Smoker (since starting smoking, reports smoking daily)
- Tried to Quit – (made a quit attempt in the last 6 or 12 months)

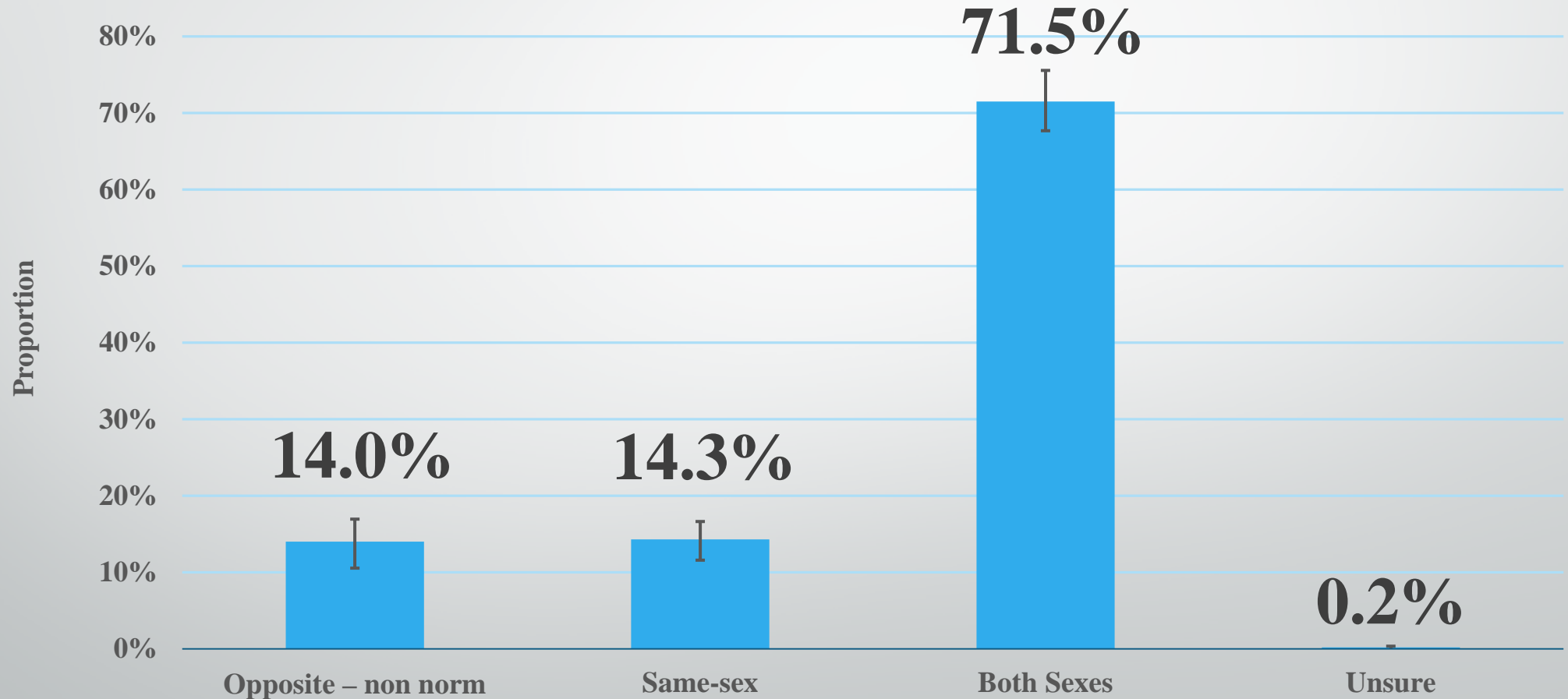
(Generated proportion estimates and odds ratios using the “survey” commands for weighted data)

Sample Demographic Differences

	1994 - Add Health			2013 - YRBS		
	Total	Sexual Minority	Heterosexual	Total	Sexual Minority	Heterosexual
Sexual Minority	7.9%			10.7%		
Sex						
Male	50.6%	50.7%	50.6%	50.9%	36.5%	52.6%
Female	49.4%	49.3%	49.4%	49.1%	63.5%	47.4%
Race						
White	66.6%	63.5%	66.8%	62.3%	52.4%	63.5%
African American	15.7%	16.9%	15.6%	15.2%	19.9%	14.6%
Hispanic	11.3%	13.0%	11.1%	14.3%	18.4%	13.9%
Other	6.4%	6.6%	6.4%	8.2%	9.3%	8.0%

Sexual Minority Sub-Groups: 1994 Add Health

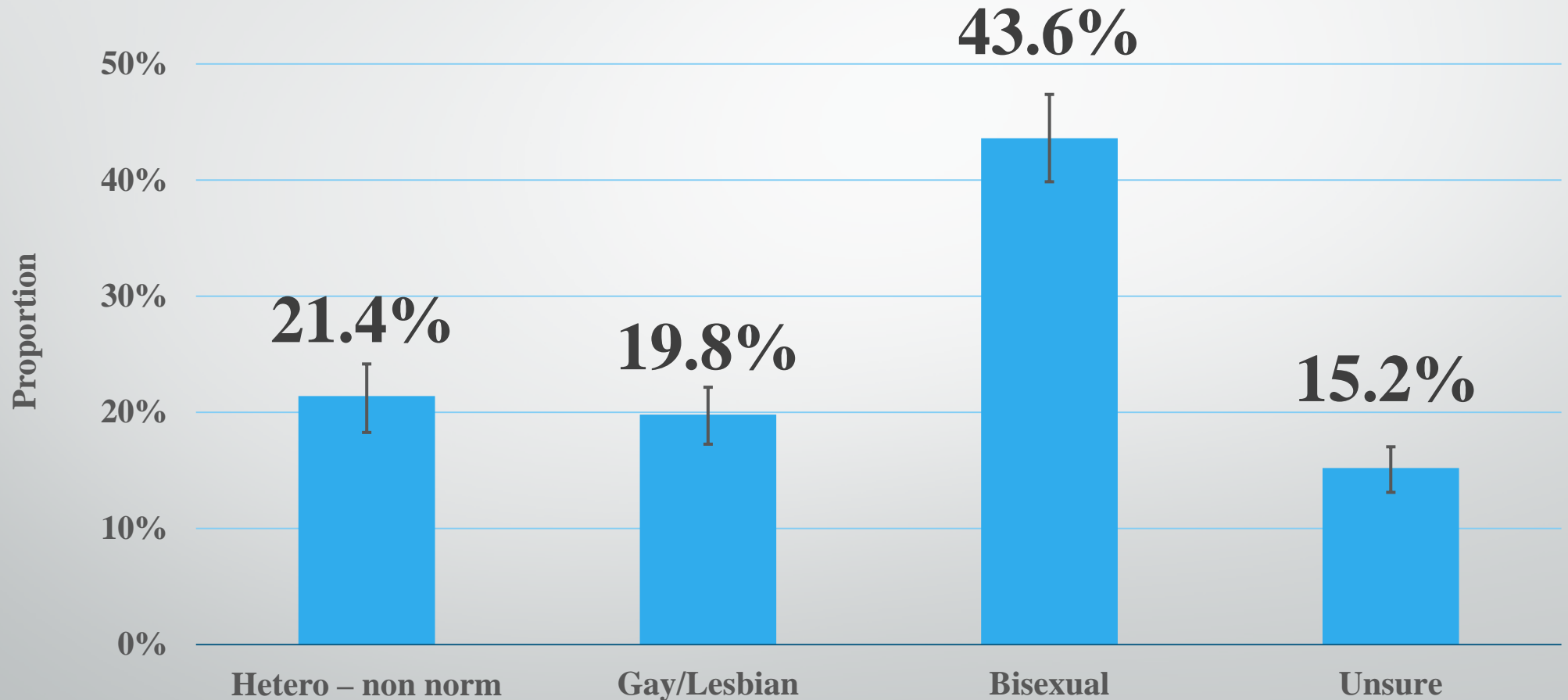
Estimated proportion of sexual minority youth in each subgroup of romantic attraction in the 1994 Add Health dataset with 95% confidence intervals



For data table, see Appendix B

Sexual Minority Sub-Groups: 2013 YRBS

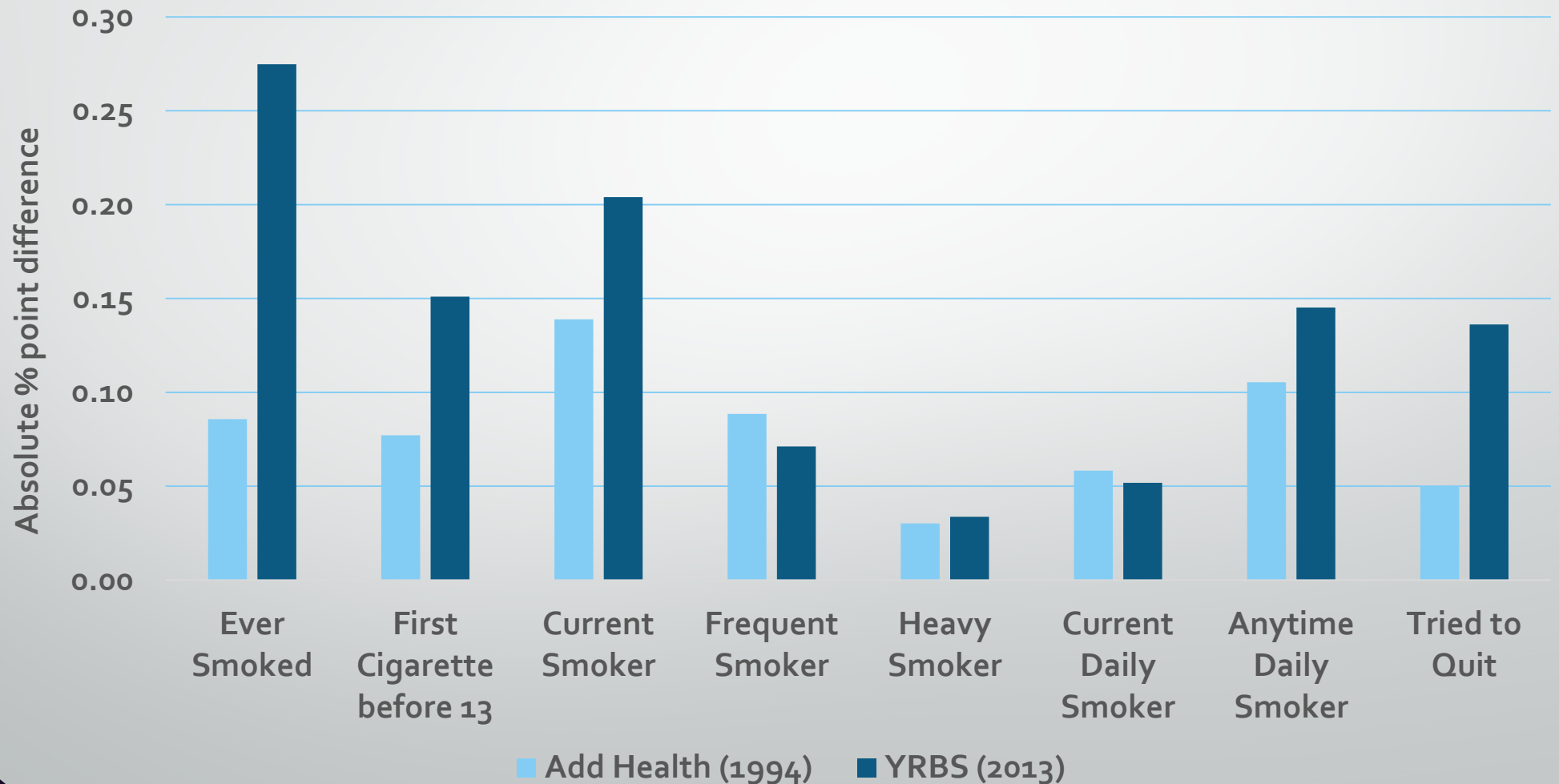
Estimated proportion of sexual minority youth in each subgroup of **sexual identification** in the 2013 YRBS dataset with 95% confidence intervals



For data table, see Appendix B

Smoking Disparity Within Each Population

Absolute difference (disparity) in proportions on smoking variables between heterosexual and sexual minority youth by sample



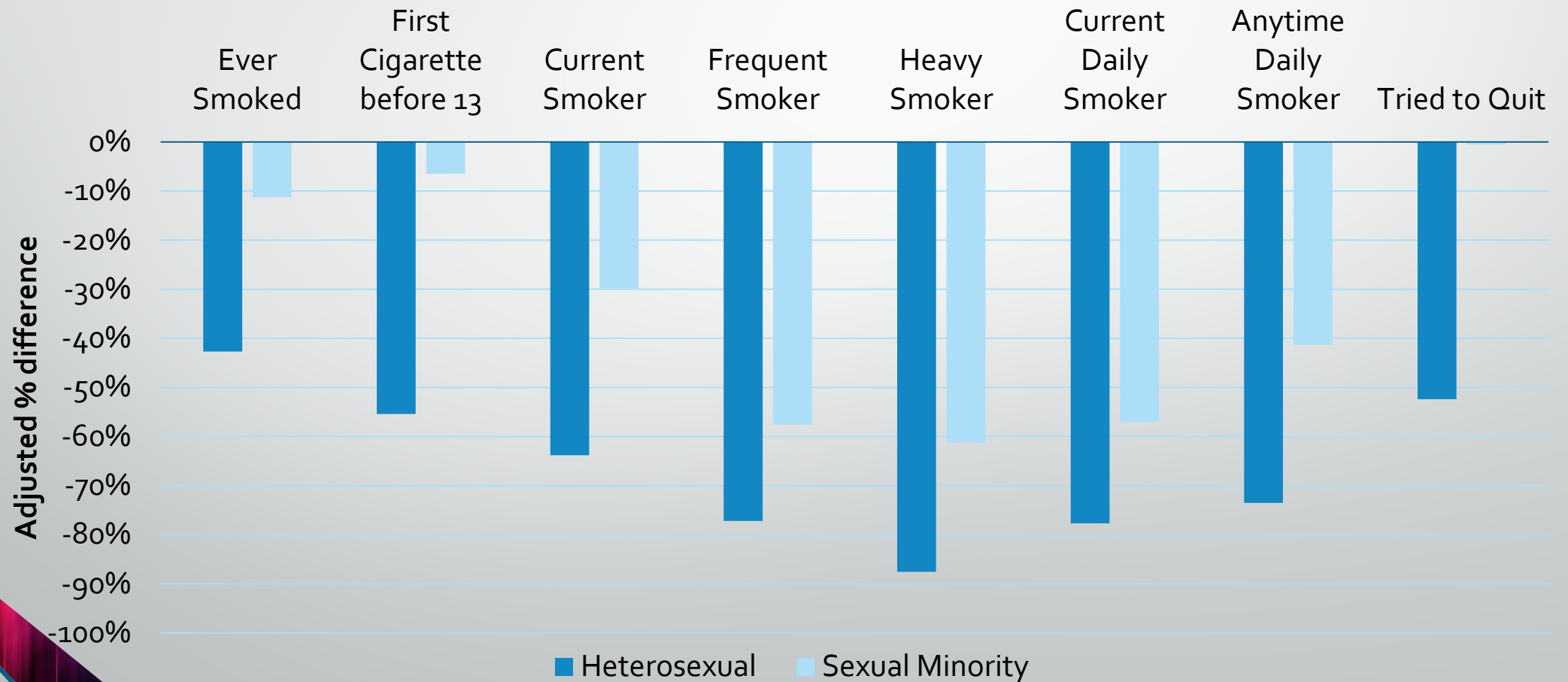
Differences in Current Smokers

	Add Health Smokers			YRBS Smokers		
	Proportion		Odds Ratio	Proportion		Odds Ratio
	Hetero	SMY	Adj ⁺	Hetero	SMY	Adj ⁺
First Cigarette before 13	34.1%	41.7%	1.5 [*]	30.9%	41.5%	1.7 ^{**}
Anytime Daily Smoker	69.8%	71.3%	1.1	44.5%	58.2%	2.2 ^{***}

*p<.05, **p<.01, ***p<.001; +adjusted for age, sex, and race/ethnicity

Difference in Smoking Variables 1994 and 2013

Relative difference (decrease) in smoking variables between Add Health (1994) and YRBS (2013) samples by sexual minority category



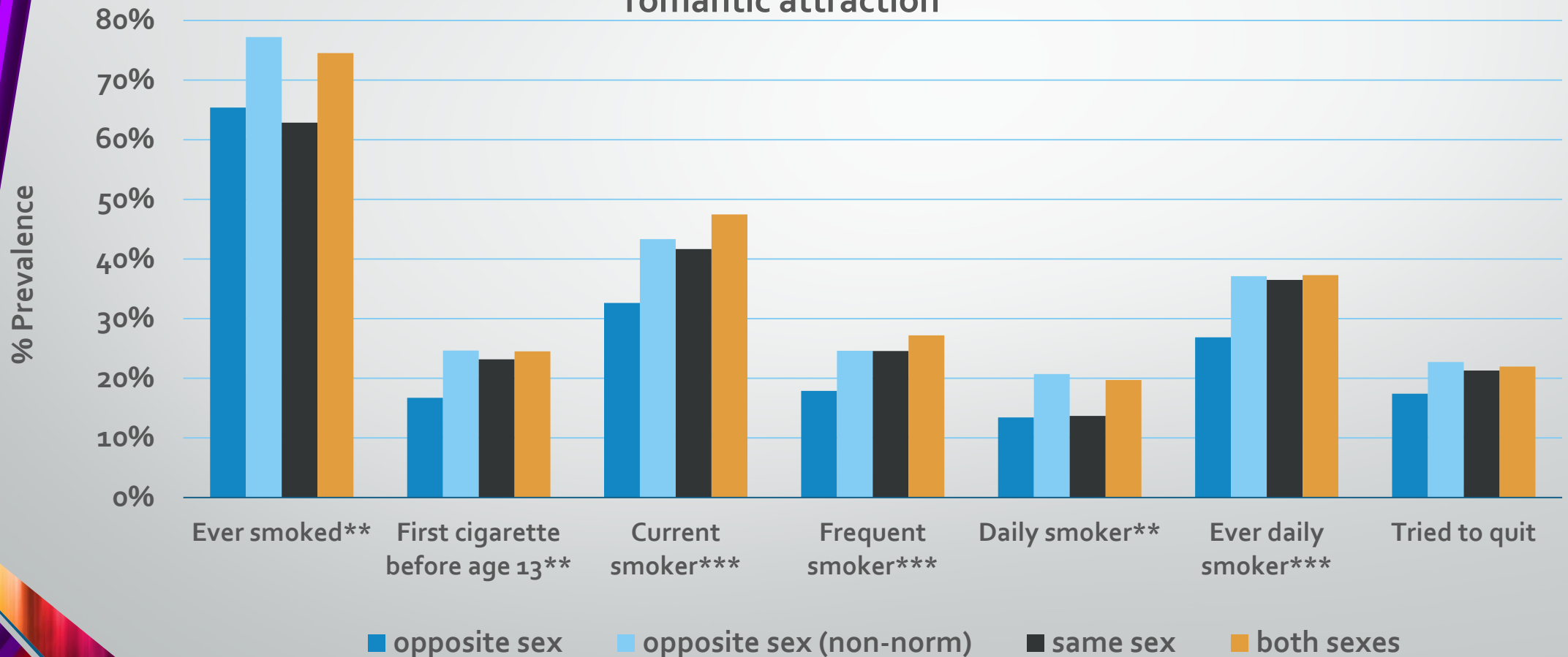
Differences in Smoking Variables Sexual Minority Current Smokers

	1994 - Add Health	2013 - YRBS	OR - adj
First cigarette before 13	41.7%	41.5%	0.95
Frequent Smoker	57.4%	34.7%	.44***
Heavy Smoker	23.9%	14.0%	0.6
Daily Smoker	41.4%	25.4%	.55**
Ever Daily Smoker	71.3%	58.2%	.61*
Tried to quit	46.9%	50.9%	1.2

*p<.05, **p<.01, ***p<.0001; adjusted for age, sex and race/ethnicity

Smoking Variables in Sexual Minority Subgroups: Add Health

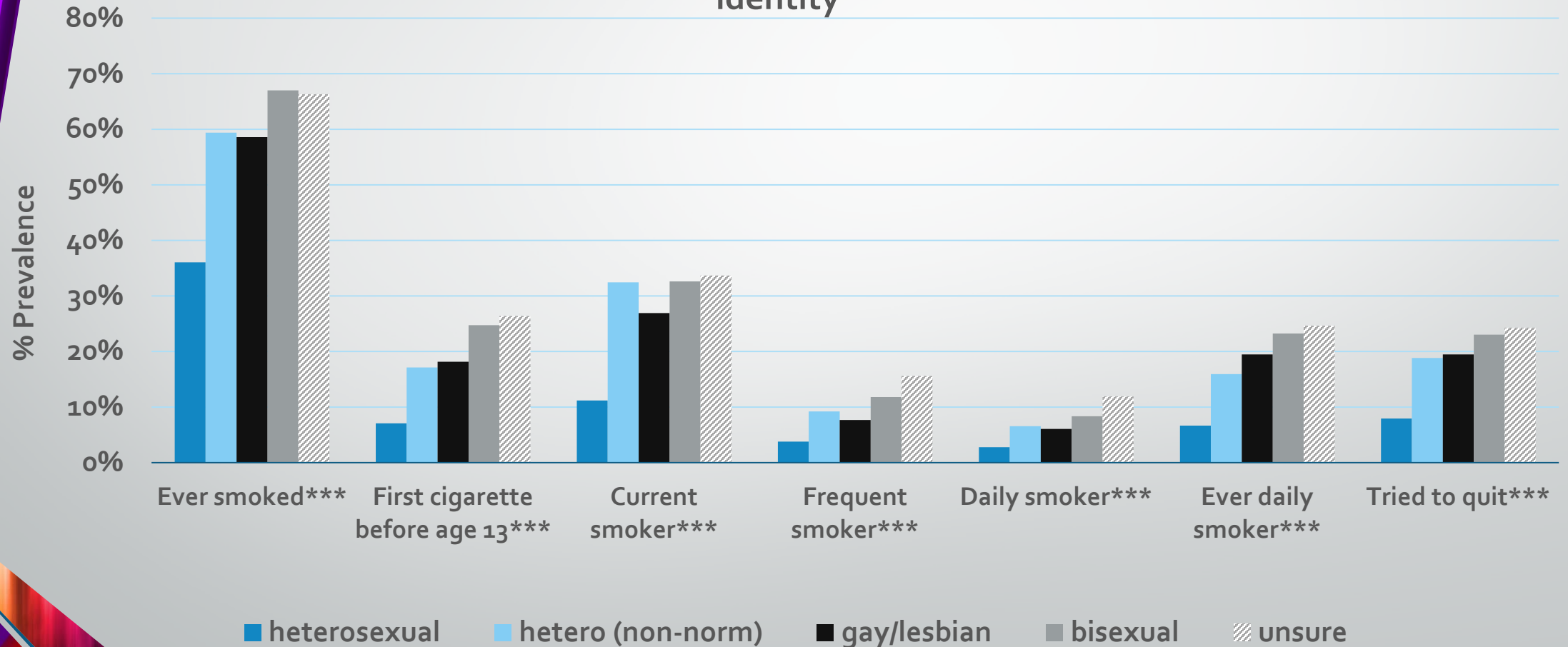
Add Health (1994): Estimated proportion of youth for smoking variables by romantic attraction



** $p < .01$, *** $p < .001$, data table in Appendix C

Smoking Variables in Sexual Minority Subgroups: YRBS

YRBS (2013): Estimated proportion of youth for smoking variables by sexual identity



*** $p < .001$ data table in Appendix C



Implications for Research

- Validate the trends by analyzing the 2015 YRBS data.
- Assess trends in the urban setting with the YRBS Urban School District dataset.
- Conduct more community-based participatory research with adolescents and their identified support networks.
- Explore the continued early initiation of smoking in sexual minority youth with a focus on earlier ages.



Implications for Policy & Practice

- Explore & Adopt a best practice for psycho-sexual development questions. One question will probably not be enough.
- Develop curricula that include risk factors associated with sexual minority youth and smoking earlier than adolescence.
- Enhance training of early childhood practitioners with psycho-sexual development and stresses related to early feelings of “being outside the majority.”
- Target prevention at youth who are attracted to both sexes or identify as bisexual.
- Target prevention at youth who identify with the majority culture but who have feelings and behaviors outside of that culture.

What Does It All Mean?

- Disparity in smoking behaviors still exists, and may have grown.
- Smoking behaviors appear to have decreased overall, but at different rates.
- Once an adolescent starts smoking, trends in smoking behaviors are similar between groups.
- Sexual minority youth continue to start smoking at younger ages.
- Sample differences may indicate a cultural shift in adolescent psycho-sexual development.



Questions