

Reducing Bias Through a Bimodal Data
Collection
2006 Texas Cell Phone Pilot Study

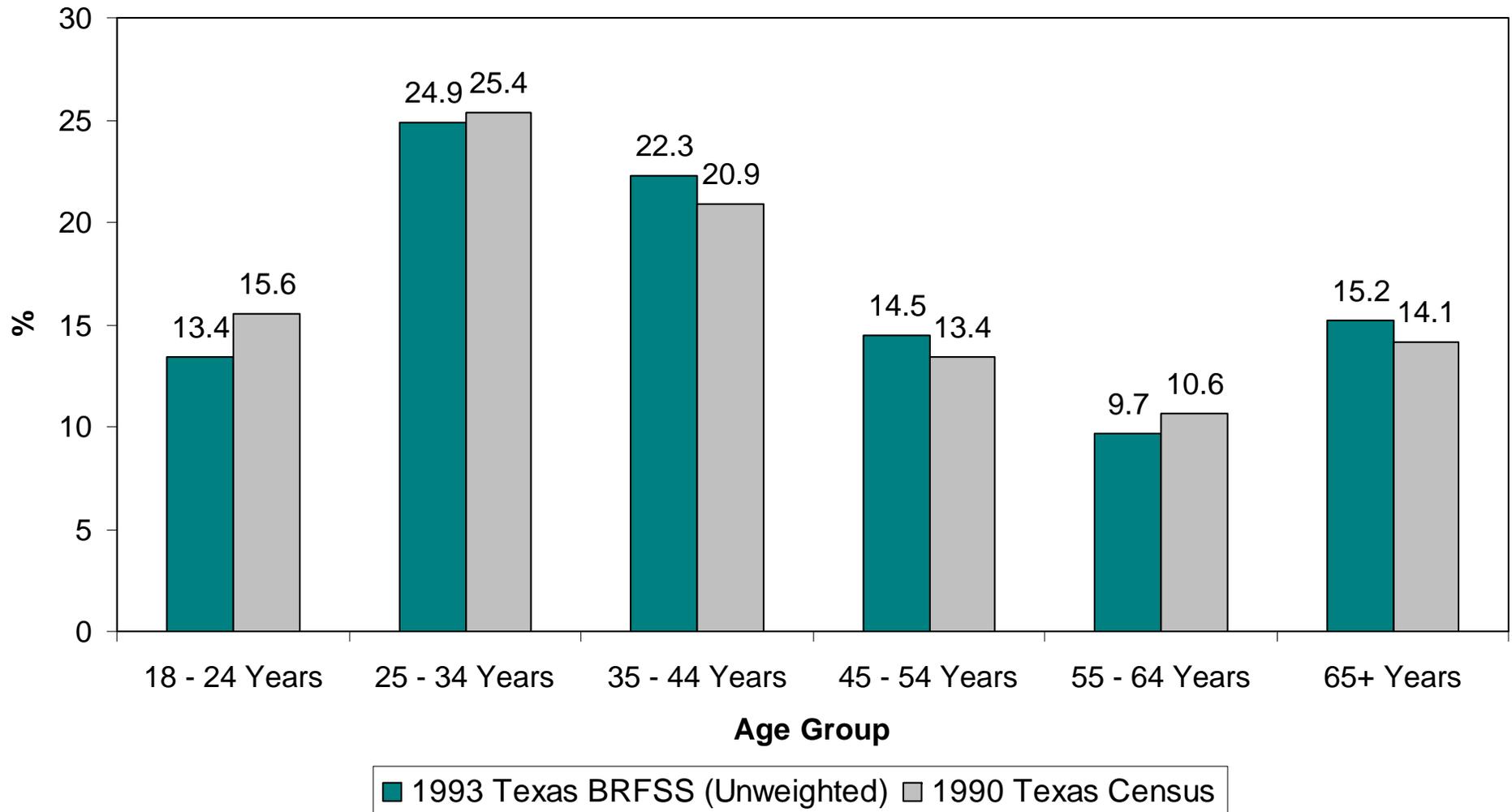
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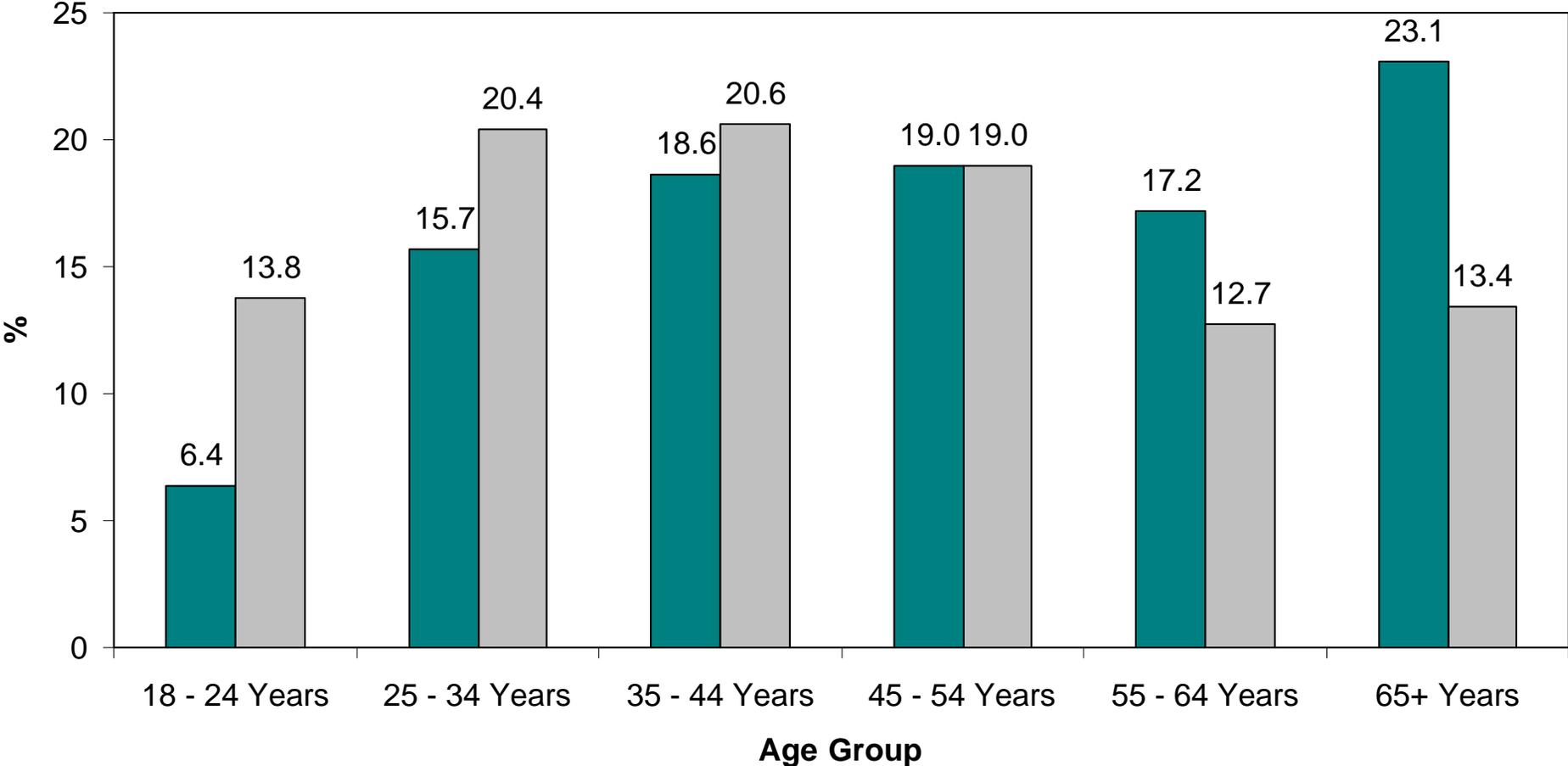
Background

- # BRFSS interviews are on residential landlines only
- # More households are becoming cell phone only households
- # Harder to reach and collect data on younger respondents

Age Distributions in the 1990's 1993 Texas BRFSS vs. 1990 Census Texas Population



Age Distributions in 2005 Texas BRFSS vs. Estimated Texas Population



■ 2005 Texas BRFSS (Unweighted) ■ 2005 Estimated Texas Population

2006 Texas Cell Phone Pilot Study Objectives

- # To capture younger adults via cell phone
- # To reduce bias in the Texas BRFSS using a bimodal approach

Methods

Questionnaire Changes

- # 2006 Texas Cell Phone Pilot Study
 - Number of residential lines
 - Number of adults living in their household
 - If a student, did they live in on-campus housing
 - State currently living in
 - Abbreviated 2006 BRFSS questionnaire used
- # 2006 Texas BRFSS (November/December)
 - Number of personal cell phones

2006 Cell Phone Pilot Study

- # Statewide sample (no stratification)
- # English interviewing only
- # Cell phones were called mainly on weekends and evenings from 7pm-9pm.
- # Made sure respondent was in a safe place (e.g., not driving a car).
- # Made sure the respondent was an adult.
- # Timeframe: November 2006 – February 2007

Cell Phone Pilot Study: Disposition Recodes

- # Dataset sent had 298 interviews
- # 2 respondents answered all questions as “refused” (recoded as 220)
- # 2 respondents started questionnaire but didn’t finish (recoded as 210)
- # 7 respondents were students living in dorms (recoded as 420)
- # 13 respondents were living in a different state (recoded as 405)
- # **TOTAL # OF INTERVIEWS: 274**

2006 Texas BRFSS

- # 13 strata which included 3 African American oversamples
- # Only November/December files used in this analysis
- # Spanish and English interviewing
 - 98 Spanish interviews were removed before merging the two datasets.
- # TOTAL # OF INTERVIEWS: 1,323

Demographic Differences of the Respondents

2006 Nov/Dec BRFSS

- 3.7% aged 18-24 yrs
- 34.8% Male
- 17.5% Hispanic

2006 Cell Phone Pilot

- 25.5% aged 18-24 yrs
- 51.5% Male
- 26.8% Hispanic

Combining Data Sources

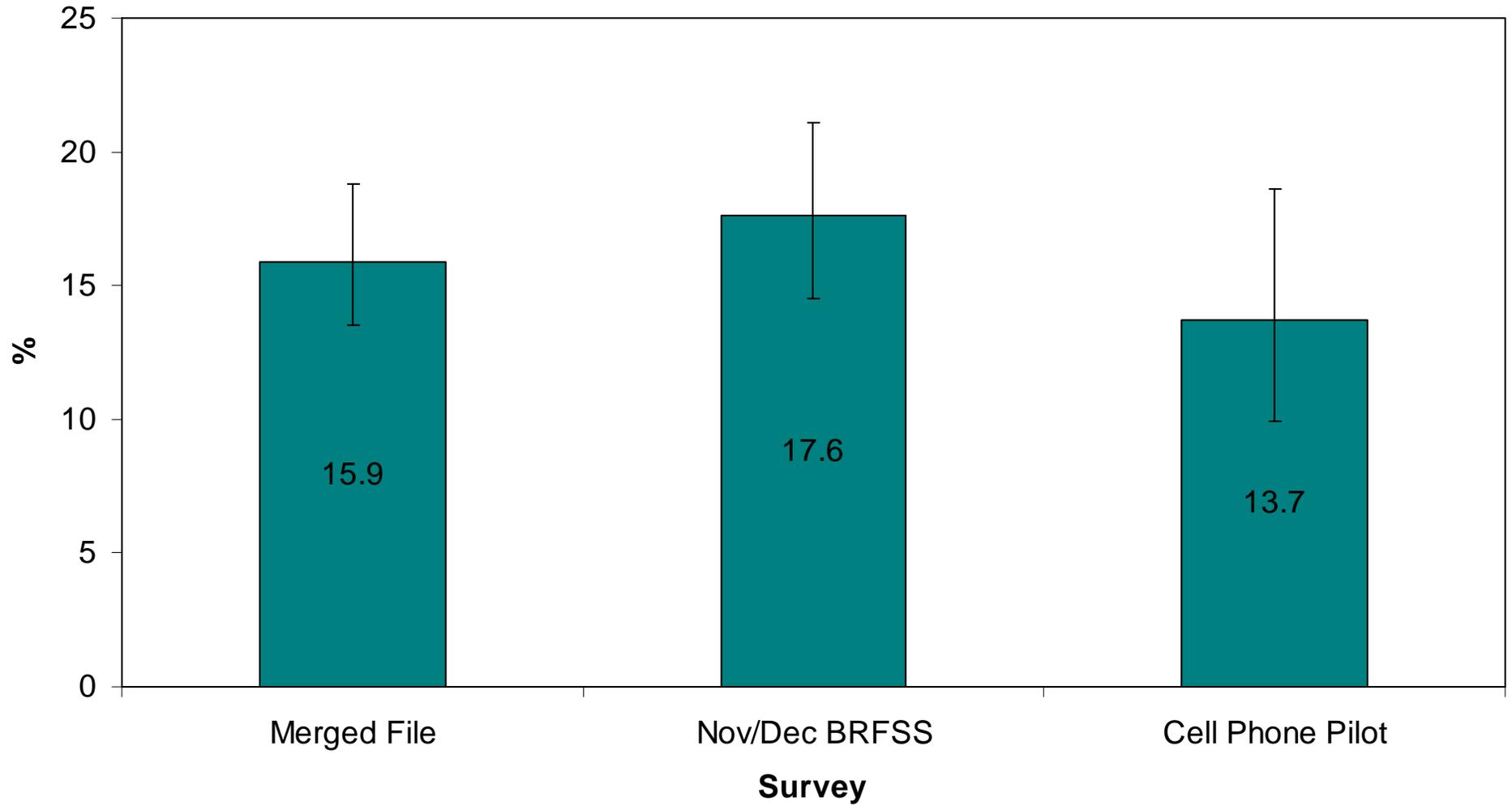
- # 269 cell phone respondents matched to the appropriate 2006 geographic stratum based on self-reported county code.
- # 5 respondents placed into a geographic stratum based on their reported age.
 - Remaining Metropolitan Counties (younger)
 - All Other Non-Core Counties (older)

Re-Weighting

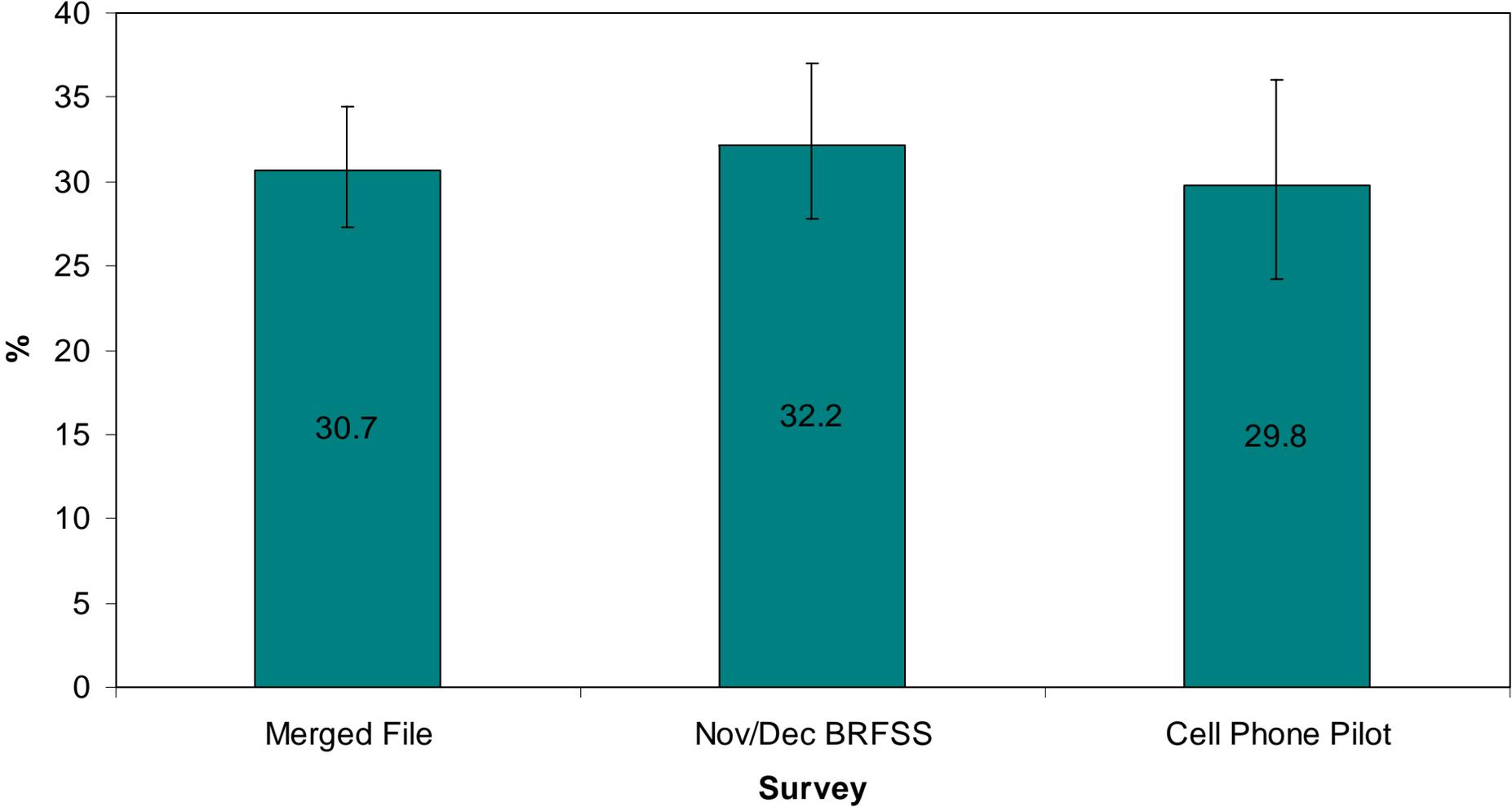
- # wt_prob took into account access to both residential phone numbers and personal cell phones.
- # If (denstr=1) $wt1 = wt_prob$
- # If (denstr=2) $wt1 = wt_prob * 1.5$
- # If (denstr=3) $wt1 = wt_prob * 2.87$
- # Poststratified by age (3) and gender.

Results

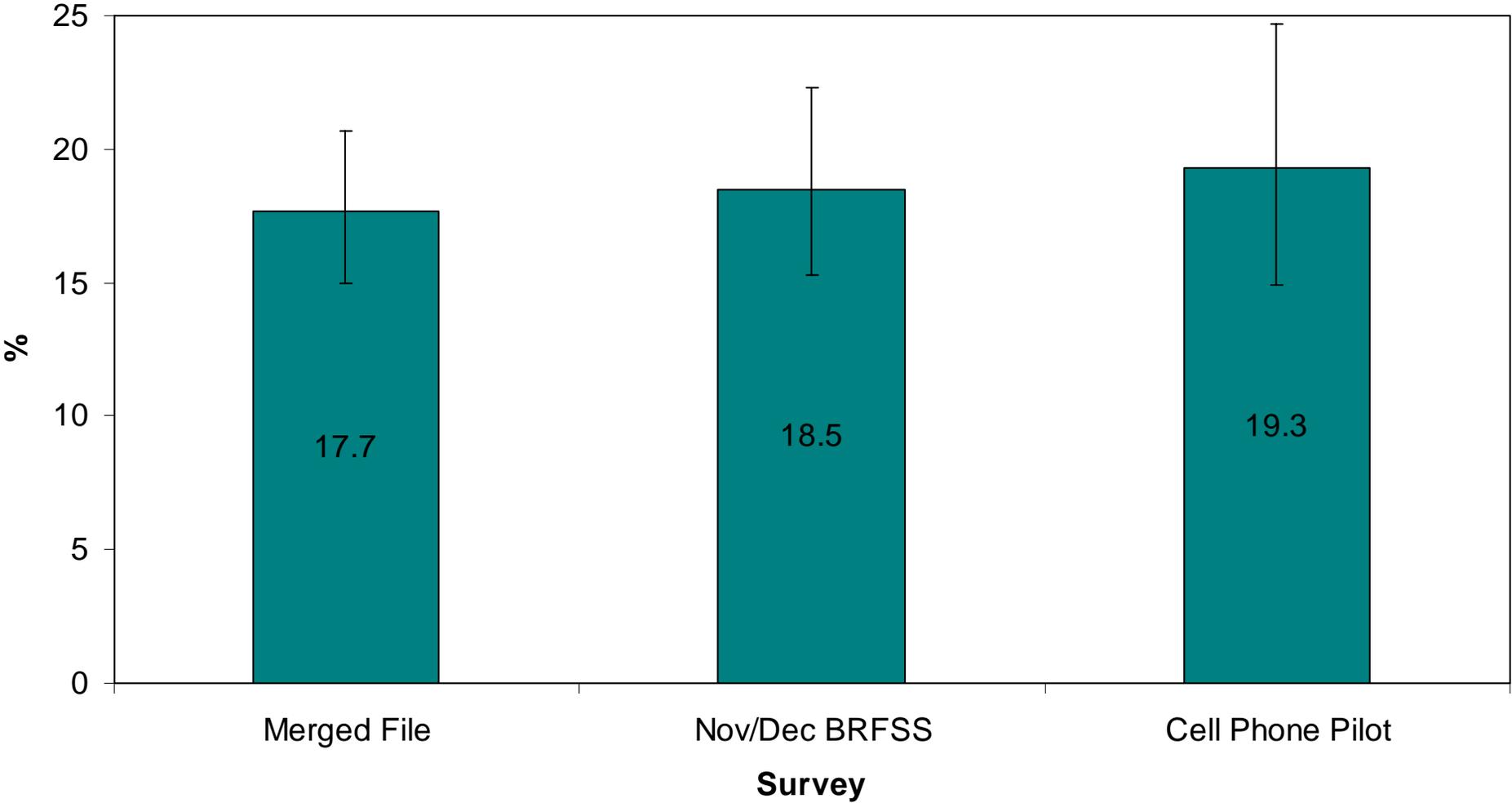
**Prevalence of Fair/Poor General Health by Survey
2006 Texas BRFSS & Cell Phone Pilot Study**



Prevalence of Obesity by Survey
2006 Texas BRFSS & Cell Phone Pilot Study



**Prevalence of Current Smokers by Survey
2006 Texas BRFSS & Cell Phone Pilot Study**



Age-Adjusted Estimates by Phone Status

2006 Merged Texas Cell Phone Pilot Study and BRFSS

	Only Landline		Both		Only Cell	
n	374		963		107	
	%	95% CI	%	95% CI	%	95% CI
General Health, Fair/Poor	31.0	(24.9 - 37.9)	10.8	(8.4 - 13.8)	21.9	(12.3 - 35.9)
5+ Days of Physical Health Not Good	26.3	(20.4 - 33.1)	15.3	(11.6 - 19.9)	24.0	(14.0 - 38.0)
5+ Days of Activity Limitations	24.4	(17.4 - 33.1)	9.0	(6.0 - 13.4)	12.5	(5.1 - 27.4)
Current Smoker	20.2	(14.7 - 27.0)	15.0	(12.1 - 18.6)	32.0	(20.4 - 46.4)
Obesity	40.9	(32.9 - 49.5)	28.0	(23.8 - 32.7)	36.0	(24.1 - 49.8)

Limitations

- # Response rate (CASRO) low for Cell Phone Pilot.
 - 2006 Cell Phone Pilot Study: 5.7%
 - 2006 Nov/Dec BRFSS (includes Spanish): 44.9%
- # Cell phone sampling did not occur based on BRFSS geographic strata (the 2.87 assumption).
- # Questions added to each survey could be tailored for better understanding.
- # Don't know what percentage of households overlapped between the two studies.
 - Were some of the refusals people who already participated in the landline survey or vice versa?

Discussion

- # Since an estimated 74.1% of adults in Texas had both a cell phone and a landline phone, 17.0% had only a landline, and 9.0% had only a cell phone, is it worth it?

Thanks

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