

# CARBON MONOXIDE DETECTOR PRESENCE AMONG REPRODUCTIVE AGE WOMEN IN SOUTH CAROLINA: A 2011 BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM ANALYSIS

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## INTRODUCTION

- Carbon monoxide (CO) is:
  - A colorless, odorless gas
  - Detected by CO detector in home
- Chronic CO exposure in pregnancy is usually caused by smoking<sup>1</sup>
- Acute CO poisoning in pregnancy has been associated with increased:
  - Maternal mortality (18-24%)<sup>1</sup>
  - Fetal mortality (36-67%)<sup>1</sup>
- Accidental household exposure to CO is the most frequent cause of poisoning in pregnancy<sup>1</sup>
- In 2013, 41% of women in South Carolina (SC) reported their pregnancy was unintended<sup>2</sup>
  - 32% were mistimed<sup>2</sup>
  - 9% were unwanted<sup>2</sup>
- Due to the high fetal mortality rate associated with CO exposure and high incidence of unintended pregnancy in SC, we investigated **the associations between CO detector presence in the residence and demographic characteristics of reproductive aged (18-44 years old) women in South Carolina** using data from the Behavioral Risk Factor Surveillance System (BRFSS)

## METHODS

- 2011 SC BRFSS data were obtained (n=12,948)
- Study sample restricted to reproductive aged women:
  - Who were not currently pregnant
  - Who responded yes/no to "Do you have a carbon monoxide detector in your home?"
- Final sample size = 1,160
- Survey logistic regression analysis done in SAS 9.2
- Significance of bivariate associations evaluated via odds ratios and 95% confidence intervals

## CONTACT INFORMATION

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## RESULTS

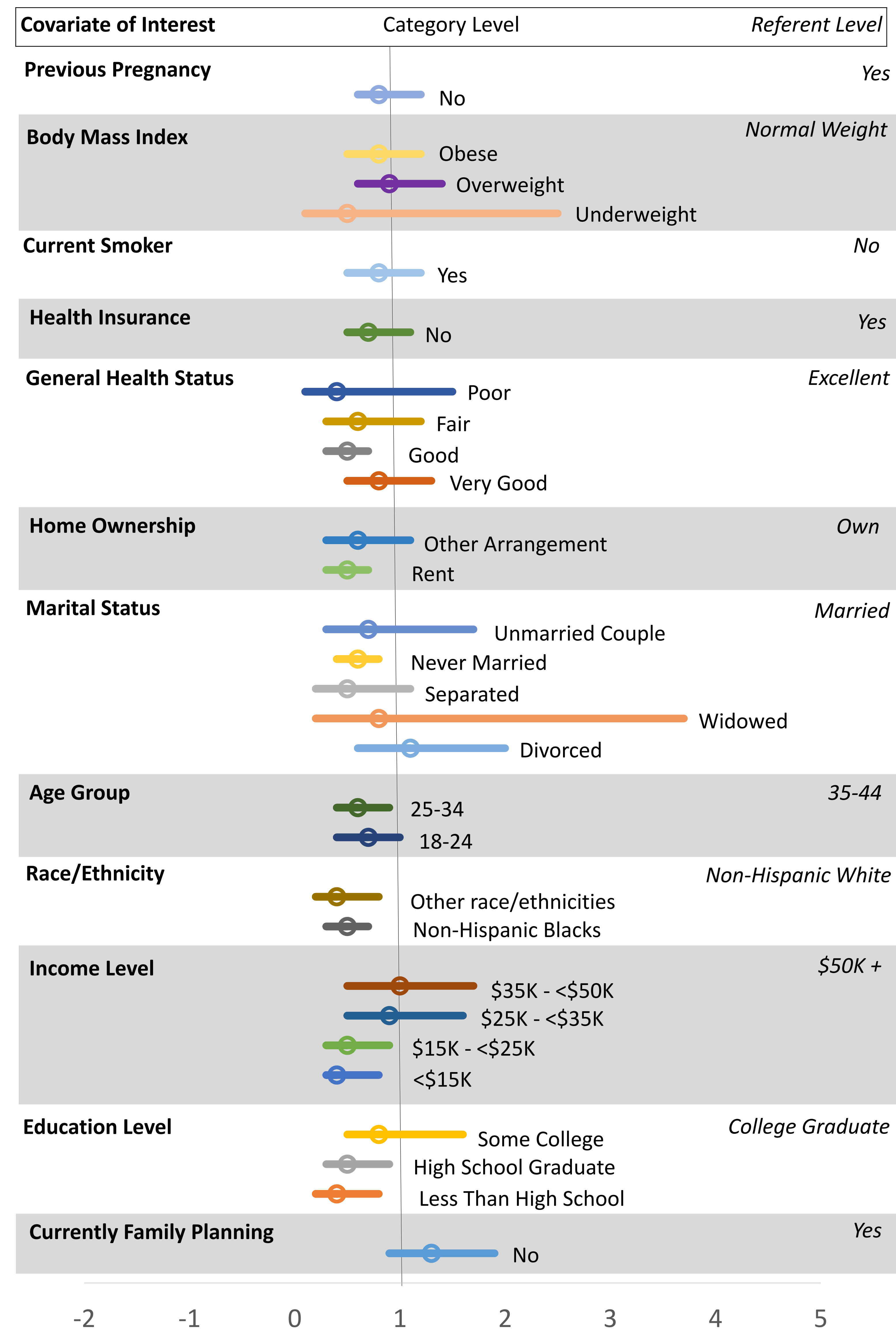


Figure 1. Odds Ratios and 95% Confidence Intervals Measuring Association between CO Detector Presence in Home and Covariates of Interest (SC BRFSS 2011)

Lower Confidence Level — Point Estimate — Upper Confidence Level

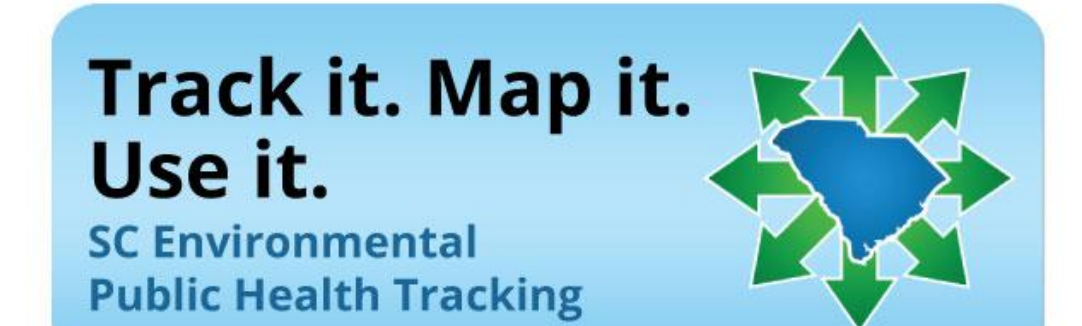
## RESULTS continued

Table 1. Subset of the significant associations identified

Referent level, Covariate of interest	Odds ratio (95% confidence interval)
<i>Compared to college graduates,</i>	
Those with less than HS	0.42 (0.23, 0.80)
HS graduates	0.53 (0.33, 0.85)
<i>Compared to an annual household income of \$50K+,</i>	
<\$15K	0.45 (0.26, 0.79)
\$15K - <\$25K	0.52 (0.30, 0.87)
<i>Compared to Non-Hispanic Whites,</i>	
Non-Hispanic Blacks	0.46 (0.32, 0.69)
Other race/ethnicities	0.37 (0.17, 0.78)
<i>Compared to those who are married,</i>	
Those who have never been married	0.56 (0.38, 0.83)
<i>Compared to those who own their home,</i>	
Those who rent their home	0.47 (0.32, 0.74)

## CONCLUSIONS

- Non-pregnant women of reproductive age with lower odds of having a CO detector in the home:
  - Reported lower educational attainment and income level
  - Had never been married
  - Rented their home
  - Were not non-Hispanic White
- Same associations found in general population of SC
- Family planning was not associated with the presence of CO detectors
- It may be important to focus educational efforts, i.e. CO sources and detector placement, on reproductive age women in SC due to high incidence of unintended pregnancy



## REFERENCE

- Friedman P, Guo XM, Stiller RJ, Laifer SA. Carbon monoxide exposure during pregnancy. *Obstet Gynecol Surv.* 2015 Nov;70(11):705-12.
- South Carolina Pregnancy Risk Assessment Monitoring System. 2013 data.