

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

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## INTRODUCTION

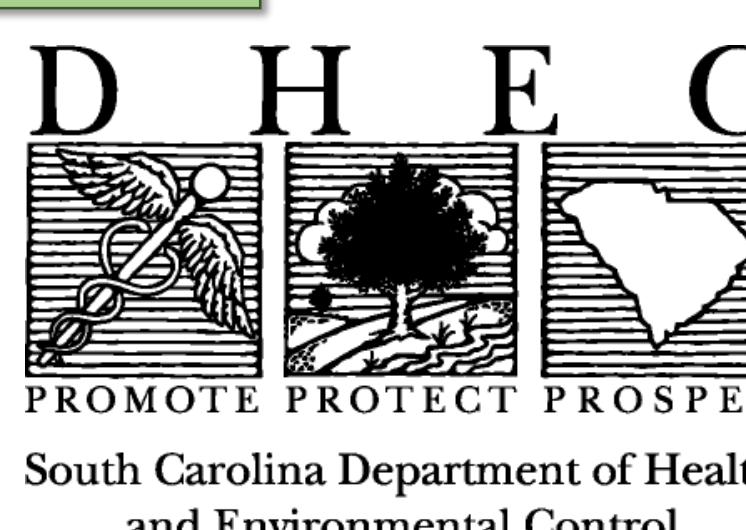
- Carbon monoxide (CO) is:
  - A colorless, odorless gas
  - Detected by CO detector in home
- Chronic CO exposure in pregnancy is usually caused by smoking<sup>1</sup>
- Acute CO poisoning in pregnancy has been associated with increased:
  - Maternal mortality (18-24%)<sup>1</sup>
  - Fetal mortality (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

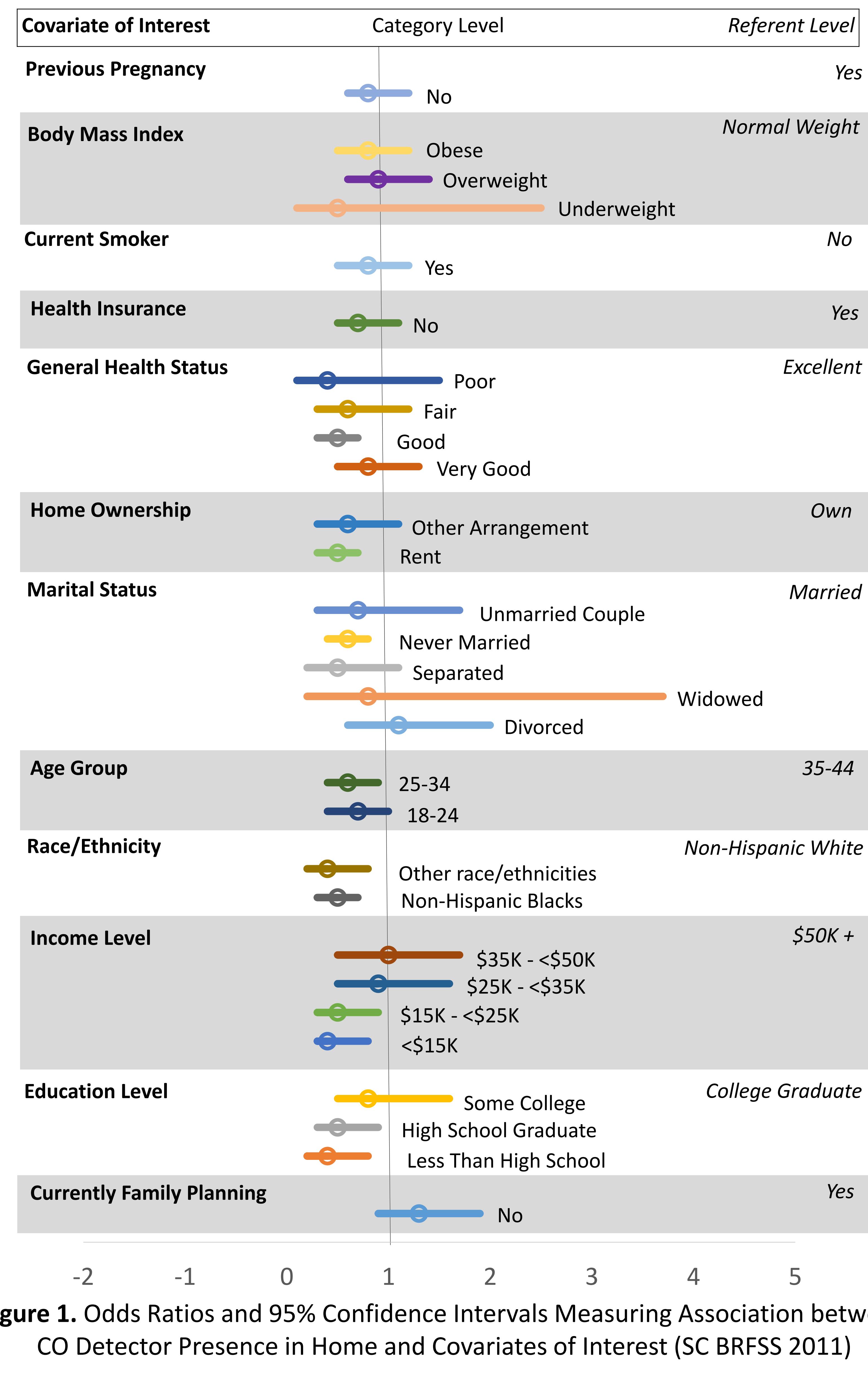


Figure 1. Odds Ratios and 95% Confidence Intervals Measuring Association between CO Detector Presence in Home and Covariates of Interest (SC BRFSS 2011)

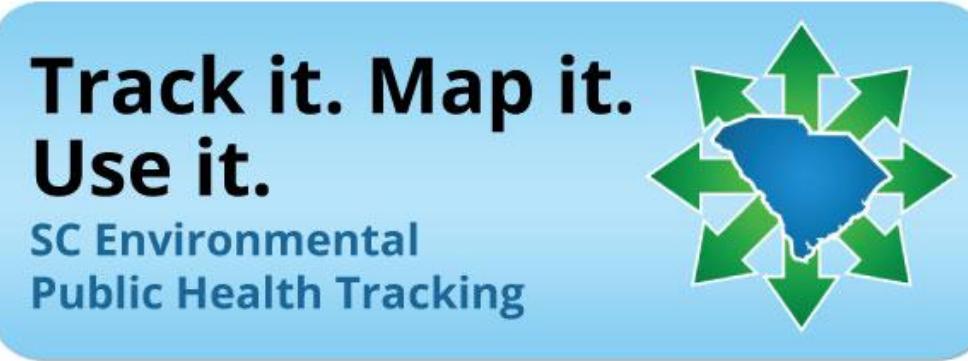
## RESULTS *continued*

Table 1. Subset of the significant associations identified

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