

Sociodemographic Correlates of Reported Workplace Eye Injuries Among 11 States: Behavioral Risk Factor Surveillance System, 2005-2007

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INTRODUCTION

- Eye injuries are a common occurrence in the workplace.
- Certain jobs, such as those in the construction and automotive industries, have been identified as high risk for ocular injuries.
- This study evaluated self-reported lifetime prevalence of work-related eye injuries and associated work loss days across various sociodemographic characteristics.

METHODS

- 69,558 participants from 11 states in CDC's 2005-2007 BRFSS survey, an annual state-based telephone survey gathering data on general health behaviors and risk factors for morbidity and mortality from non-institutionalized civilian US population ≥18 yrs.
- Optional "Visual Impairment and Access to Eye Care" module with question, "Have you EVER had an eye injury that occurred at your workplace while you were doing your work?"

- Subgroup analysis 2005 BRFSS respondents who reported a workplace eye injury and responded to the question, "About how many days did the injury cause you to miss work?"; responses were categorized: 0 days, 1-3 days and 4+ days.
- Binary logistic regression models were developed to test the independent association between workplace injury and select sociodemographic characteristics adjusting for state. For the subgroup analyses, a generalized polytomous logistic regression model was used to test for independent association between sociodemographic characteristics and categories of work loss days associated with the injury: no work loss days, 1-3 days and 4+ work loss days.

Table 1. Weighted multivariable logistic regression of predictors of reporting ever incurring a workplace eye injury among 2005-2007 BRFSS participants (pooled n=69,358)

Predictors	Ever workplace eye injury	
	OR	95% CI
Age (ref = 40-49 years old)		
50-59 years old	0.94	0.82-1.07
60-69 years old	0.77	0.67-0.89
70-79 years old	0.47	0.39-0.55
80 and over	0.27	0.21-0.35
Gender (ref = female)		
Male	6.51	5.77-7.34
Race/Ethnicity (ref = White, Non-Hispanic)		
Black, Non-Hispanic	0.55	0.45-0.66
Other, Non-Hispanic	1.12	0.89-1.42
Hispanic	0.57	0.45-0.72
Marital Status (ref = Married, Living with Partner)		
Widowed, Divorced or Separated	1.21	1.08-1.37
Single	0.67	0.55-0.83
Education (ref = Less than High School)		
High School Diploma	0.85	0.72-0.98
Attended College	0.67	0.57-0.79
Graduated from College	0.27	0.22-0.32
Obesity (ref = Healthy Weight (<25 kg/m²))		
Overweight (25 - 29.9 kg/m ²)	1.12	1.01-1.26
Obese (≥30 kg/m ²)	1.19	1.04-1.35
Visual Impairment (ref = No Visual Impairment)		
Visual Impairment	1.29	1.16-1.43

*Participants represent 11 states that included the optional Eye Care module in the BRFSS. See Figure 1.



Figure 1. States that included the "Visual Impairment and Access to Eye Care" module in the 2005-2007 BRFSS survey.

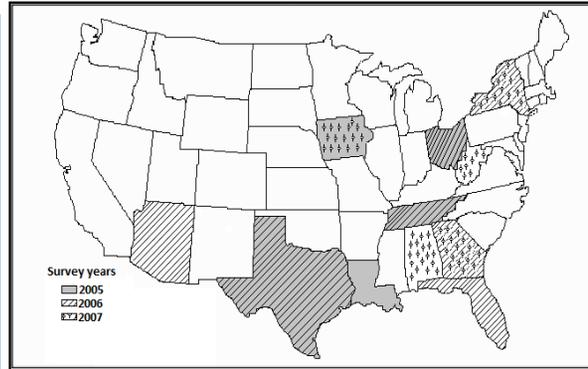


Table 2. Generalized polytomous multivariable logistic regression model for categories of work loss days (reference group = no work loss days) due to reported workplace eye injury among 2005 BRFSS participants (n = 769)*

Demographics	1-3 Work Loss Days**		4+ Work Loss Days**	
	OR	95% CI	OR	95% CI
Age (ref = 50-59 years old)				
60-69 years old	1.34	0.43-4.01	3.89	0.70-21.63
70-79 years old	0.98	0.33-2.94	5.06	0.89-27.73
80 and older	0.3	0.07-1.16	2.88	0.50-16.84
Gender (ref = female)				
Male	1.31	0.70-2.48	2.36	1.20-4.62
Race/Ethnicity (ref = White, Non-Hispanic)				
Black, Non-Hispanic	2.68	1.01-7.38	3.15	0.88-11.10
Other, Non-Hispanic	3.42	1.35-8.75	2.06	0.64-6.51
Hispanic	1.02	0.28-3.78	1.24	0.32-4.70
Marital Status (ref = Married, Living with Partner)				
Widowed, Divorced or Separated	1.65	1.02-2.75	1.94	1.08-3.44
Single	1.25	0.40-3.92	0.69	0.19-2.52
Education (ref = Less than High School)				
High School Diploma	0.58	0.29-1.15	0.77	0.31-1.89
Attended College	0.51	0.22-1.12	1.2	0.45-3.15
Graduated from College	0.72	0.31-1.65	0.91	0.32-2.54
Obesity (ref = Healthy Weight (<25 kg/m²))				
Overweight (25 - 29.9 kg/m ²)	1.09	0.57-2.02	0.84	0.40-1.78
Obese (≥30 kg/m ²)	1.06	0.54-2.07	0.67	0.28-1.46
Visual Impairment (ref = No Visual Impairment)				
Yes	1.37	0.72-2.64	2.49	1.24-5.08

*Participants represent 5 states that included the Eye Care module in the 2005 BRFSS. See Figure 1.

**Reference group = No Work Loss days

RESULTS

- Overall prevalence of self-reported lifetime workplace eye injury was 7.9%.
- Among surveyed states, West Virginia had the highest self-reported prevalence at 12.7% and Louisiana had the lowest at 6.6%.
- Among injured workers, 54.1% reported no missed-work days, 26.2% 1-3 days missed and 19.7% 4+ missed-work days.
- Male gender was the largest predictor of reporting ever-incurring a workplace eye injury.
- When compared to non-Hispanic whites, non-Hispanic blacks were significantly less likely to report a workplace eye injury but more likely to report 1-3 work loss days due to the injury.
- Widowed, divorced or separated survey participants were more likely to report a workplace eye injury and to miss work days due to the injury.

CONCLUSION

- There was significant variability in self-reported workplace eye injury across 11 participating states.
- Higher risk population subgroups could be targeted, including: males, those with lower educational attainment, and the visually impaired.
- Further studies should also investigate the discrepancy in rates between reporting an occupational eye injury and number of work loss days among non-Hispanic black workers.
- Select predictors could support development of tailored educational interventions among states reporting a high burden of workplace eye injury.