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High-Intensity Drinking by Parental Status: Differences by Age and Sex

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Abstract

Aims.—To examine differences in high-intensity drinking (HID) by parental status, parent age, and parent sex, including two- and three-way interaction effects of these parent demographic categories.

Methods.—The present study included individuals ages 18-50 from the National Epidemiologic Study of Alcohol and Related Conditions-III (2012-13), a sample of non-institutionalized adults in the US ($N=22,278$). We calculated weighted estimates of past-year HID (10/8 standard drinks for men/women on a single occasion) for each parental status group (parents of young children <5, parents of children 5-17, not parents of children <18) overall and stratified by sex and stratified by age. We then examined the overall association of parental status and HID and tested for interactions of parental status \times sex, parental status \times age, and parental status \times age \times sex, while controlling for other relevant sociodemographic characteristics.

Results.—Prevalence of HID varied considerably by parental status, with 14.84% of parents with kids under age 5, 12.72% of parents with kids 5 to 17, and 23.15% of non-parents reporting HID. The strength of the associations of parenthood and HID were strongest for females and for older parents.

Conclusions.—While parents engage in HID less than those who are not parents, a portion of parents of young and adolescent children do report heavy drinking. Younger parents and male parents, in particular, are at high risk for HID. Given the risks to children and parents,

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Contributors

ME Patrick led the manuscript including concept, interpretation of data, and manuscript preparation. R Evans-Polce conducted the data analysis and contributed to interpretation and manuscript preparation. AC Wagner and CJ Mehus contributed to interpretation of results and manuscript preparation. All authors have approved the final manuscript.

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Conflict of Interest

All authors declare that they have no conflicts of interest.

interventions focused on preventing HID among parents, especially fathers, could have significant public health impacts.

1. Introduction

Parental alcohol use confers risk to children's physical and mental health. For example, infant mortality and sudden infant death syndrome (SIDS) are associated with maternal alcohol use and alcohol use disorder (1–4). Throughout childhood, parental alcohol use disorder is associated with an increased risk of abuse, neglect, and child welfare involvement (5,6). Children of parents with alcohol use disorder symptoms are at heightened risk for negative health outcomes, such as early initiation of substance use, conduct disorders, and mental illness (7–10). Even occasional parental alcohol use can pose risks to children: 24% of parents with young children say they are unlikely to plan drinking limits or next-day childcare when drinking alcohol for special events (11), leaving children vulnerable to insufficient care.

High-intensity drinking (HID) is a type of heavy drinking characterized by consuming twice the number of drinks traditionally associated with binge drinking. HID is associated with particular risks, including an increased risk of alcohol-related injuries, driving accidents, and blacking out (12–14). Previous research has not documented the extent to which parents of young and adolescent children engage in HID, or whether prevalence differs by child age, or parent age and sex. Parents of younger children are more likely to decrease their alcohol use than parents of older children (15). While young children under the age of 5 require more hands-on caregiving, school-aged children continue to require care and supervision and they are susceptible to the modeling of alcohol use by parents (16,17).

Despite the fact that parental HID is likely to have particularly negative consequences for children, only one previous study has examined the relationship between HID and parental status (18): parents at age 25/26 were less likely to engage in HID than non-parents. Understanding characteristics of parents most at risk for HID will identify *children* most at risk and inform the development of targeted interventions for parents.

Although parenthood is generally associated with a decrease in alcohol use (19–21) including HID (18), some studies showing no or reverse associations (22–24). Disparate findings may be because some parents are more likely to reduce drinking than others. For example, women are consistently found to decrease alcohol use in response to parenthood but findings related to men's response are varied and often smaller than those for women (22,25–29). Additionally, in contrast to general decrease in alcohol use among parents, becoming a parent before age 25 is sometimes associated with increased alcohol and substance use (20,30,31). Compared to older mothers, mothers under 25 were most likely to binge drink in the first year of their child's life; mothers over 36 years old when their child was born had the highest proportion of binge drinkers five years later (32–34). The current study is one of the first to compare the associations between parental status and HID for men and women, allowing direct comparisons of mothers' and fathers' drinking.

1.1 Research Aims

The purpose of this paper is to examine the relationship between parental status and HID. Building on findings from previous studies, we also examine sex and age differences in this relationship. Specific research aims were to examine: (1) differences in HID by parental status (i.e., parents of young children under age 5, parents of children ages 5 to 17, and adults with no children under age 18 living with them), (2) the association of parental status with HID, for women and men, and (3) the three-way interaction of parental status, age, and sex on HID.

2. Method

2.1 Sample

Data were drawn from the National Epidemiologic Study of Alcohol and Related Conditions-III (NESARC-III) collected in 2012-13. NESARC-III is a nationally representative survey of non-institutionalized civilian adults in the US 18 and older (N=36,309). NESARC-III had a household- and person-level response rate of 72% and 84%, respectively. Institutional Review Boards at National Institutes of Health and Westat approved the study. This study focused on those who were ages 18 to 50 and had data on parental status and drinking (n=22,278; 50.95% female; 59.52% White non-Hispanic, 13.12% Black non-Hispanic, 6.72% Asian non-Hispanic, and 18.96% Hispanic).

2.2 Measures

Individuals self-reported the largest number of drinks they had consumed in a single day in the last 12 months. *High-intensity drinking* (HID) was defined as one or more past-year occasions in which men consume 10 or more and women consume 8 or more standard drinks.

Parental status.—We contrasted those who were parents of children under 5 who lived with them, those who were parents of children age 5-17 who lived with them, and those who did not have any children under age 18 living with them. Those with multiple children were categorized based on their youngest child.

Age (18-24, 25-35, and 36-50 years) and *sex* (male, female) were used as predictors and moderators. *Race/ethnicity* (White non-Hispanic, Black non-Hispanic, American Indian/Alaska Native non-Hispanic, Asian non-Hispanic, and Hispanic), *family income* tertiles (< \$25,000, \$25,000-\$59,999, and \$60,000+), and *marital status* (married, living with someone as if married, widowed, divorced, separated, and never married) were included as controls.

2.3 Analysis

We first estimated the prevalence of HID by parental status (aim 1). We also examined HID prevalence by parental status and by age for adults 18-24, 25-35, and 36-50 years old, separately for men and women, using design-based Pearson chi-square to test for differences. Using multivariable logistic regression, we examined the overall associations of parental status and HID, separately for women and men, and tested for interactions of parental status \times sex (aim 2) and parental status \times age \times sex (aim 3) while controlling for

other relevant sociodemographic characteristics. NESARC-III survey weights were used to adjust for oversampling and nonresponse, and weight respondents to represent the US civilian population.

3. Results

3.1 Overall prevalence of HID by parental status

Overall, 19.15% of adults age 18 to 50 engaged in HID in the past year. In Figure 1 we present prevalence of HID by parental status. The prevalence of HID differed significantly by parental status ($\chi^2(113)=101.05$, $p<0.001$). Specifically, HID prevalence was greater for nonparents (23.15% [95% CI: 22.06%, 24.28%]) compared to parents of young children less than age 5 (14.84% [13.36%, 16.46%]) and parents with children 5-17 (12.72% [11.52%, 14.02%]). Parents with children under age 5 were significantly more likely to engage in HID compared to those with children age 5-17.

3.2 Prevalence of HID by parental status and sex

Shown in Figure 2, we examined prevalence of HID by parental status separately for men and women. Among men and women, HID prevalence differed significantly by parental status ($\chi^2(113)=30.68$, $p<0.001$ and $\chi^2(113)=46.92$, $p<0.001$, respectively). Both men and women who were parents (with children less than age 5 or children ages 5-17) had lower prevalence of HID (22.35% [19.70%, 25.24%] and 19.37% [17.14%, 21.82%] for men, and 9.36% [8.00%, 10.92%] and 8.02% [6.85%, 9.37%] for women, respectively) compared to those without children (29.63% [28.07%, 31.25%] for men and 15.44% [14.21%, 16.75%] for women).

3.3 Prevalence of HID by parental status and age

Shown in Figure 3, we examined prevalence of HID by parental status separately by age. In all three age groups (18-24, 25-35, and 36-50) HID differed significantly by parental status ($\chi^2(113)=6.33$, $p=0.002$; $\chi^2(113)=40.62$, $p<0.001$, $\chi^2(113)=23.42$, $p<0.001$, respectively) such that HID prevalence was significantly lower for both parental groups compared to non-parents. Among 18-24 year olds, 18.86% (15.01%, 23.42%) of parents with children under 5, 14.14% (7.73%, 24.47%) of parents with children 5-17, and 25.94% (23.90%, 28.08%) of those with no children reported HID. Among 25-35 year olds, comparable prevalence levels were 15.98% (14.03%, 18.13%) and 16.98% (14.35%, 19.99%) of parents with young and adolescent children, and 27.92% (26.31%, 29.60%) of non-parents. Finally, among 36-50 year olds, 9.94% (7.82%, 12.56%) and 11.38% (10.09%, 12.81%) of parents with young and adolescent children and 16.97% (15.63%, 18.41%) of non-parents reported HID.

3.4 Multivariable associations of parental status and HID for men and women

In multivariable regression, we first examined overall associations of parental status and HID while controlling for sociodemographic factors (i.e., age, marital status, race/ethnicity, and family income), separately for men and women. Both men and women who were parents of young children under age 5 and who were parents of older children aged 5-17 were significantly less likely to engage in HID, compared to those with no children under age 18 (Table 1 Main Effects Models). There was a significant parental status \times sex

interaction (not shown). The negative association of having young children <5 or children 5-17 (vs. no children <18) with HID was stronger for women compared to men.

3.5 Interactions of parental status by age for men and women

Next, we examined potential interactions of parental status with age. We found a significant interaction of parental status \times age for men and women. Among men, the negative association of having young children with HID (vs. no children <18) was stronger for those aged 25-35 and for those aged 36-50 compared to those aged 18 to 24 (Table 1). There was no significant association among women (Table 1 Interaction Models).

The three-way interaction of parental status, parent age, and sex was significant ($p < 0.020$). As seen in Table 1, for men the association of having children 5-17 with HID when a parent is 25-35 (aOR: 3.92) The 3-way interaction can also be visualized in Figure 3 where there is greater variability in prevalence between parental age categories for men than for women.

4. Discussion

There are no specific guidelines for parents' alcohol use, even around their children, despite binge drinking and parental alcohol use disorder carrying present and future risks for children (35–37). This study is the first to document rates of HID among parents of children of various ages. Our findings highlight specific areas of public health concern. Although parenthood is associated with decreased drinking overall (18,19), many parents continue to engage in HID after having children. In particular, nearly 15% of parents of children under age 5, and nearly 13% of parents with children ages 5-17 have engaged in HID in the last year. Adults who continue to drink alcohol at high levels after transitioning to parenthood may represent a non-responder group. The interactions we analyzed showed that parents who are men or younger are less likely to have decreased levels of HID compared to parents who are women or older, respectively. The differences between mothers and fathers were largest when parenting young children, perhaps reflecting a time when sex differences in childrearing tend to be the greatest. Interventions for fathers, especially of fathers of infants and preschool-aged children, and for adults who become parents at younger ages should focus on reducing HID.

Prevalence of HID for those with young children were particularly low for older parents. This finding, along with the findings of Liu et al. (32–34), suggests that older parents may adjust their alcohol use in response to parenting more than younger parents. Younger parents (e.g., ages 18 to 24) may require more support to reduce their drinking, possibly to address factors relating to things such as unplanned parenthood, difficulties with financial or other resources, and greater social pressure to drink heavily as is normative among their peers.

The primary limitation of this study is that the relatively broad predictors necessarily obscure some heterogeneity within groups and do not differentiate HID that occurred while responsible for children or while children were being cared for by others. Furthermore, only data on children living with the adults were available, so people in the no children group may have been parents of children not residing with them. Future research should examine

contexts of parent drinking, whether children were present, and parenting quality during and after drinking occasions.

In sum, parents are generally less likely to engage in HID than non-parents, but the significant portion of parents who engage in HID—particularly fathers and younger parents—represent a public health concern. Interventions should target parental HID and guidance should be given to parents on ways to recognize and minimize risks their drinking poses for their children.

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Highlights

- Prevalence of high-intensity drinking (HID) varied by parental status and sex.
- Parents reported HID less than non-parents; women less than men.
- Parenting a young child was associated with a greater decrease for women than men.
- Younger (aged 18 to 24) and male parents are at higher risk for HID.

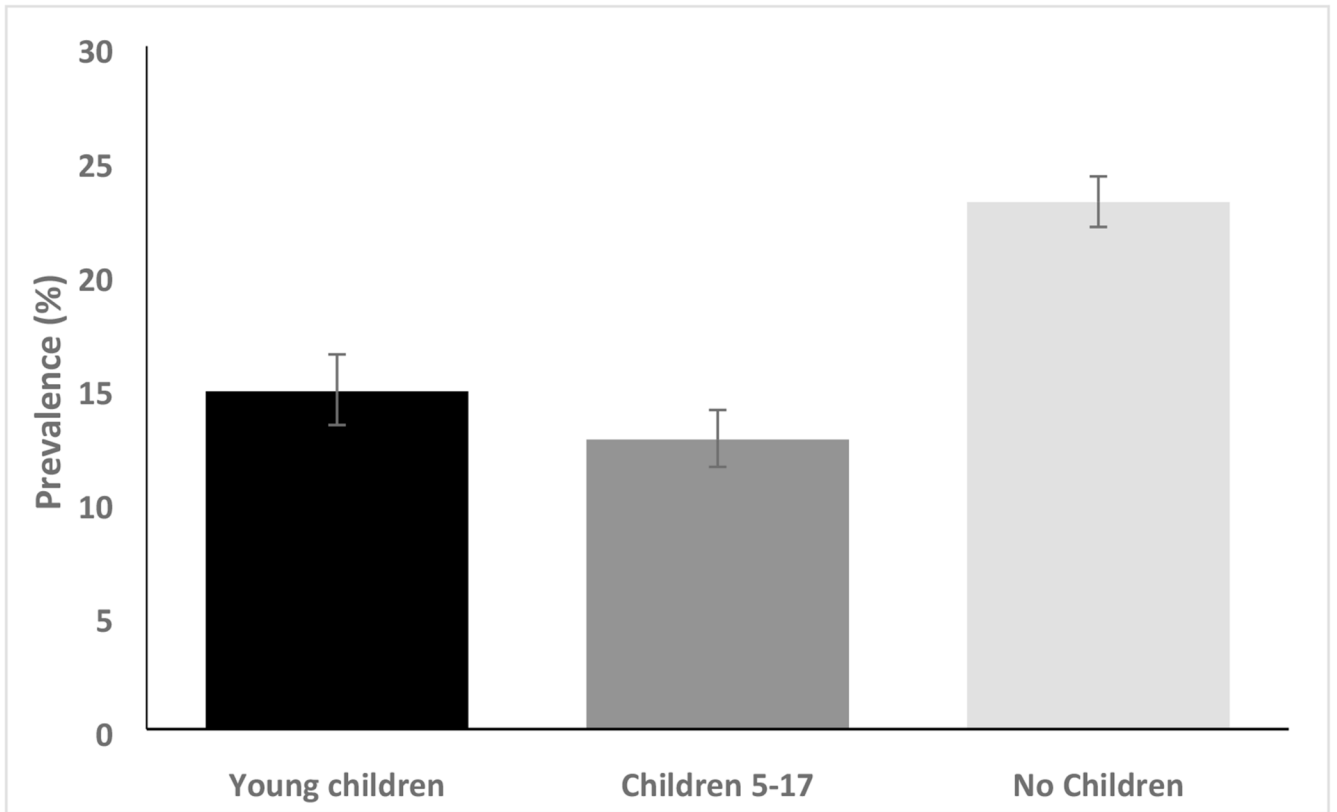


Figure 1. Weighted prevalence of high-intensity drinking in the past year by parental status among adults aged 18 to 50.

Note: error bars represent 95% confidence intervals.

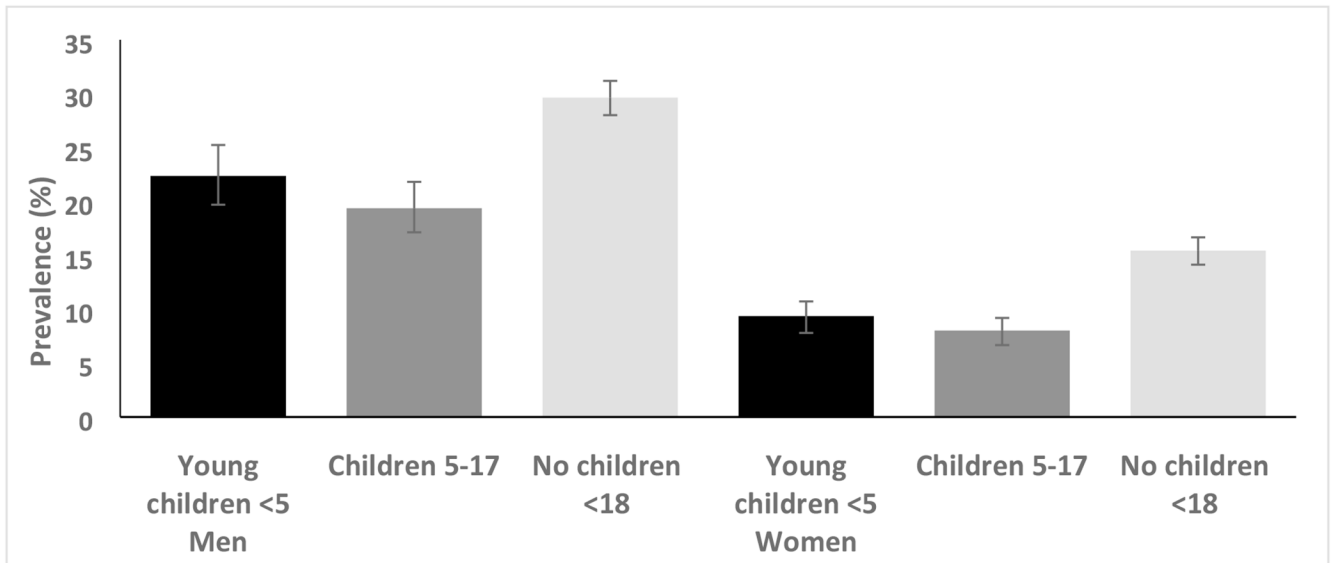


Figure 2. Weighted prevalence of high-intensity drinking in the past year by parental status and sex among adults aged 18 to 50.

Note: error bars represent 95% confidence intervals.

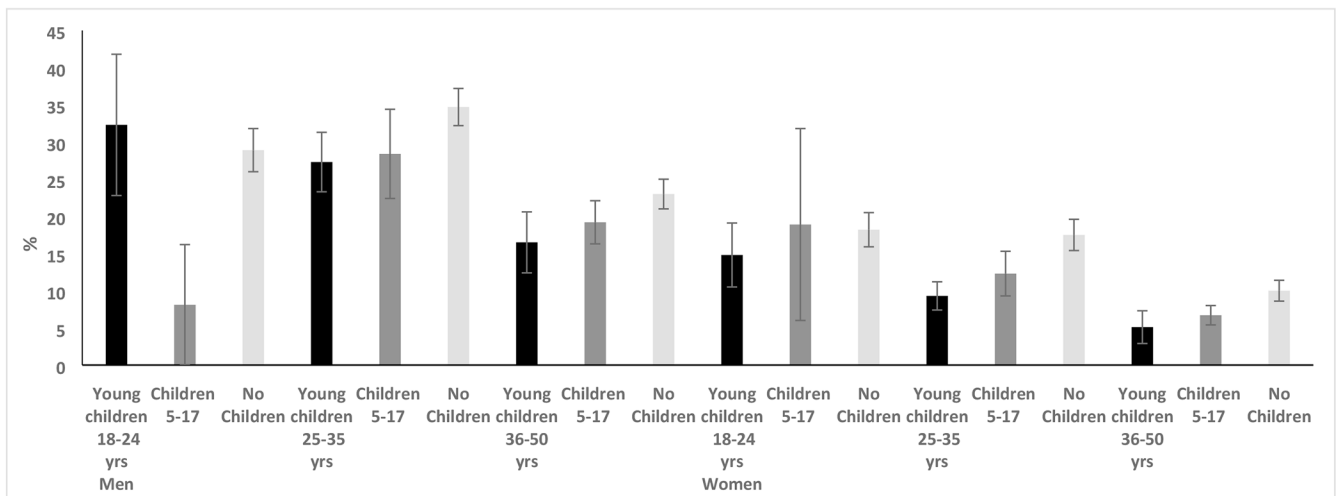


Figure 3. Weighted prevalence of high-intensity drinking in the past year by parental status and age, separately for women and men, among adults aged 18 to 50.
 Note: error bars represent 95% confidence intervals. Ages 18-24, 25-35, and 36-50 represent ages of adults in the sample and Young children, Children 5-17, No Children represent parental status categories.

Table 1. Parental Status as a Predictor of HID among adults aged 18-50, separately for women and men

	MEN			WOMEN				
	Main Effects Model	Interactions Model	AOR	Main Effects Model	Interactions Model	AOR		
	AOR ^b	95% CI	AOR	95% CI	AOR	95% CI		
<u>Parental status</u>								
Young children <5 years	0.71	0.58, 0.87*	1.01	0.64, 1.59	0.62	0.51, 0.75*	0.80	0.56, 1.15
Children 5-17 years old	0.76	0.64, 0.91*	0.19	0.05, 0.67*	0.73	0.59, 0.91*	1.07	0.45, 2.53
No children <18 years old	REF.		REF.		REF.		REF.	
<u>Age</u>								
18-24	REF.		REF.		REF.		REF.	
25-35	1.25	1.06, 1.47*	1.27	1.07, 1.50*	0.94	0.78, 1.14	1.01	0.81, 1.25
36-50	0.73	0.61, 0.87*	0.73	0.61, 0.89*	0.54	0.44, 0.67*	0.52	0.42, 0.65*
<u>Marital status</u>								
Never married	REF.		REF.		REF.		REF.	
Married	0.76	0.64, 0.90*	0.74	0.62, 0.88*	0.53	0.44, 0.64*	0.53	0.44, 0.64*
Living with someone as if married	1.29	1.06, 1.57*	1.25	1.04, 1.52*	1.16	0.90, 1.49	1.14	0.89, 1.46
Widowed	0.40	0.16, 0.98*	0.39	0.16, 0.96*	0.86	0.38, 1.95	0.85	0.37, 1.93
Divorced	0.97	0.79, 1.19	0.95	0.77, 1.71	0.87	0.67, 1.13	0.86	0.66, 1.12
Separated	1.22	0.85, 1.73	1.19	0.83, 1.71	1.12	0.77, 1.64	1.10	0.76, 1.60
<u>Race/ethnicity</u>								
White non-Hispanic	REF.		REF.		REF.		REF.	
Black non-Hispanic	0.40	0.33, 0.49*	0.40	0.33, 0.49*	0.37	0.30, 0.47*	0.37	0.30, 0.47*
AI/AN ^d non-Hispanic	1.28	0.77, 2.10	1.28	0.77, 2.12	1.92	1.13, 3.27*	1.91	1.12, 3.25*
Asian non-Hispanic	0.51	0.39, 0.65*	0.51	0.39, 0.65*	0.40	0.26, 0.62*	0.40	0.26, 0.62*
Hispanic	0.81	0.69, 0.95*	0.81	0.69, 0.94*	0.66	0.54, 0.81*	0.66	0.54, 0.80*
<u>Family income</u>								
Low	REF.		REF.		REF.		REF.	

	MEN				WOMEN			
	Main Effects Model	Interactions Model	Main Effects Model	Interaction Model	Main Effects Model	Interactions Model	Main Effects Model	Interaction Model
	AOR ^b	95% CI	AOR	95% CI	AOR	95% CI	AOR	95% CI
Medium	0.90	0.77, 1.04	0.90	0.78, 1.05	0.85	0.72, 1.00	0.84	0.71, 0.99*
High	0.92	0.77, 1.09	0.92	0.77, 1.10	0.84	0.69, 1.02	0.85	0.70, 1.03
<u>Parental status × Parental age</u>								
Parenting young children×age 25-35			0.70	0.43, 1.13			0.68	0.43, 1.06
Parenting young children×age 36-50			0.64	0.38, 1.10			0.65	0.34, 1.24
Children 5-17×age 25-35			3.92	1.05, 14.66*			0.65	0.26, 1.65
Children 5-17×age 36-50			4.23	1.16, 15.38*			0.66	0.27, 1.57

^aAmerican Indian/Alaska Native

^bAdjusted odds ratio

* p<0.05