

# RISK DRINKING LEVELS DURING PREGNANCY: ASSOCIATIONS ACROSS MATERNAL HEALTH OUTCOMES

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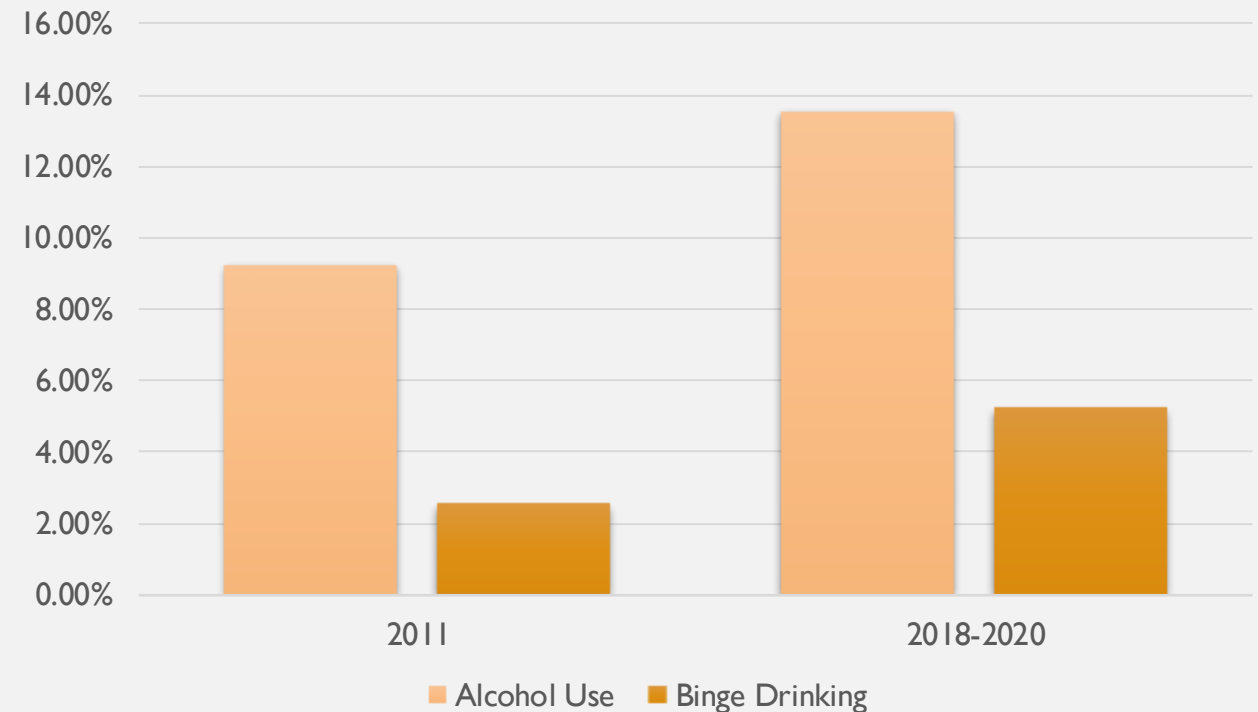
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# ALCOHOL USE & PREGNANCY

- Alcohol is the most commonly used substance during pregnancy (Burns et al., 2016)
- Prenatal alcohol exposure is linked to adverse maternal and neonatal complications (Martin et al, 2025; Scott & Sher., 2023; Popova et al., 2023)
- In the US, rates of alcohol use and binge drinking during pregnancy have increased (Denny et al., 2020; Gosdin et al., 2022)

## Rates of Alcohol use and Binge Drinking in the US Over Time



## **CURRENT GUIDELINES**

No level of alcohol is  
recommended during pregnancy

## **REALITY**

Some pregnant people continue to drink, drink  
heavily, are unable to abstain, or may not know  
they are pregnant

# WHO DRINKING RISK FRAMEWORK

## Female specific WHO risk drinking levels

<i>None</i>	0 drinks
<i>Mild</i>	1-1.4 drinks
<i>Moderate</i>	>1.4-2.9 drinks
<i>High</i>	>2.9-4.3 drinks
<i>Very High</i>	>4.3 drinks

- WHO drinking risk are associated with
  - Improved physical and mental health, quality of life, and overall functioning (Witkiewitz et al., 2018; 2019; 2020)
  - Reduced risk for alcohol use disorder (AUD; Richards et al., 2024)
- Non-abstinent recovery is possible (SAMHSA, 2013; Witkiewitz & Wilson, 2021)

# RESEARCH GAP & AIMS

**GAP:** How do varying levels of alcohol risk during pregnancy relate across maternal health outcomes?

**AIMS:**

- 1) Describe WHO drinking risk levels and maternal health outcomes among a sample of pregnant women.
- 2) Examine associations between WHO drinking risk across maternal health outcomes among pregnant women.

# METHODS & MEASURES

**Study:** Secondary analysis from the 2021-2023 National Survey on Drug Use and Health (NSDUH)

**Participants:** n=2,051

- pregnant females
- $\geq 18$

**Measures:**

- Self-reported past 30 day alcohol use mapped on to WHO drinking risk levels

<b>Female specific WHO risk drinking levels</b>	
<i>None</i>	0 drinks
<i>Mild</i>	1-1.4 drinks
<i>Moderate</i>	>1.4-2.9 drinks
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# OUTCOME MEASURES



SAMHSA Domain	NSDUH Variable
<i>Health</i>	Emergency Room (ER) Visits
<i>Home</i>	Difficulty completing household responsibilities (HHR)
<i>Community</i>	Difficulty participating in social activities
<i>Purpose</i>	Functional impairment

# SAMPLE DEMOGRAPHICS

n= 2,051

**Table 3: Sample Demographics**

## Age Group

18-25	794 (39.9%)
26-34	898 (43.8%)
35-49	300 (15.1%)

## Sexual Identity

Heterosexual/Straight	1 135 (85.4%)
Lesbian/Gay/Bisexual/Other	194 (14.6%)

## Race

White	1 134 (55.3%)
Black/African American	270 (13.2%)
Other	132 (6.4%)
2 or More	88 (4.3%)
Hispanic	427 (20.8%)

## Education

Less than high school/no diploma	299 (14.6%)
High school/GED	503 (24.5%)
Some College	354 (17.3%)
Associates Degree	167 (8.1%)
College/Higher	728 (35.5%)

## Employment

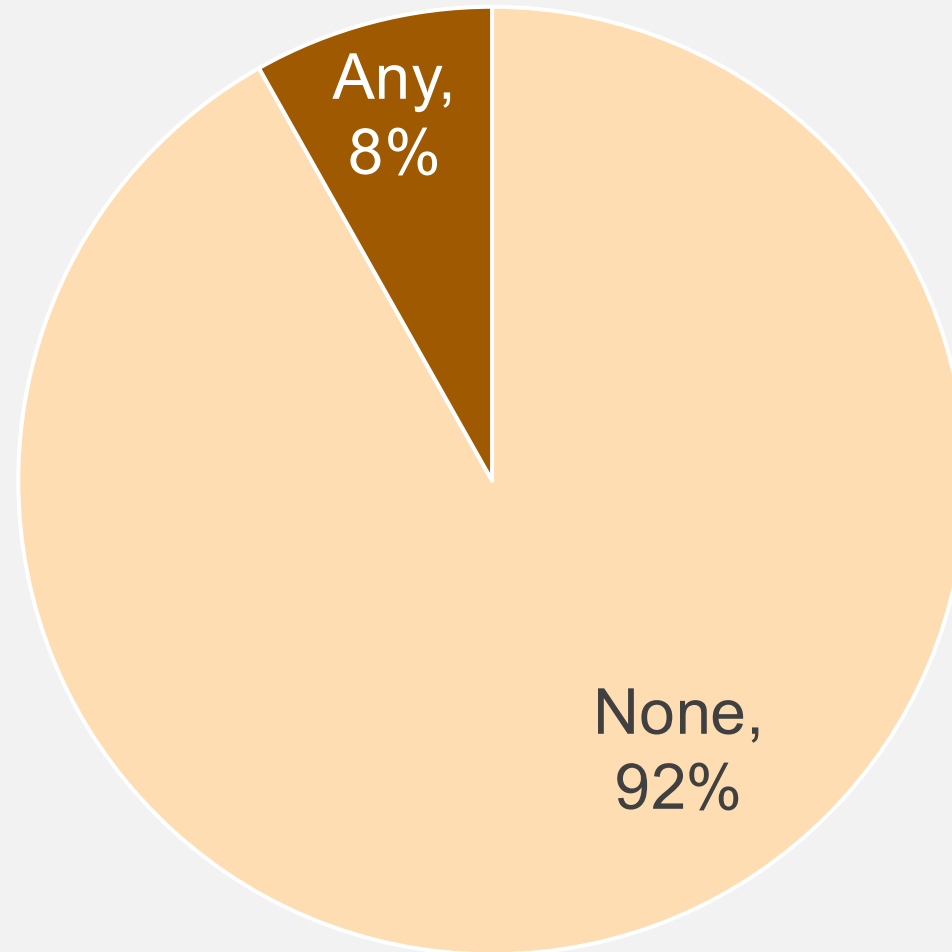
Full-time	846 (41.5%)
Part-time	323 (15.8%)
Unemployed	127 (6.2%)
Other	743 (36.4%)

# AIM I

**Describe WHO drinking risk levels and maternal health outcomes among a sample of pregnant women.**

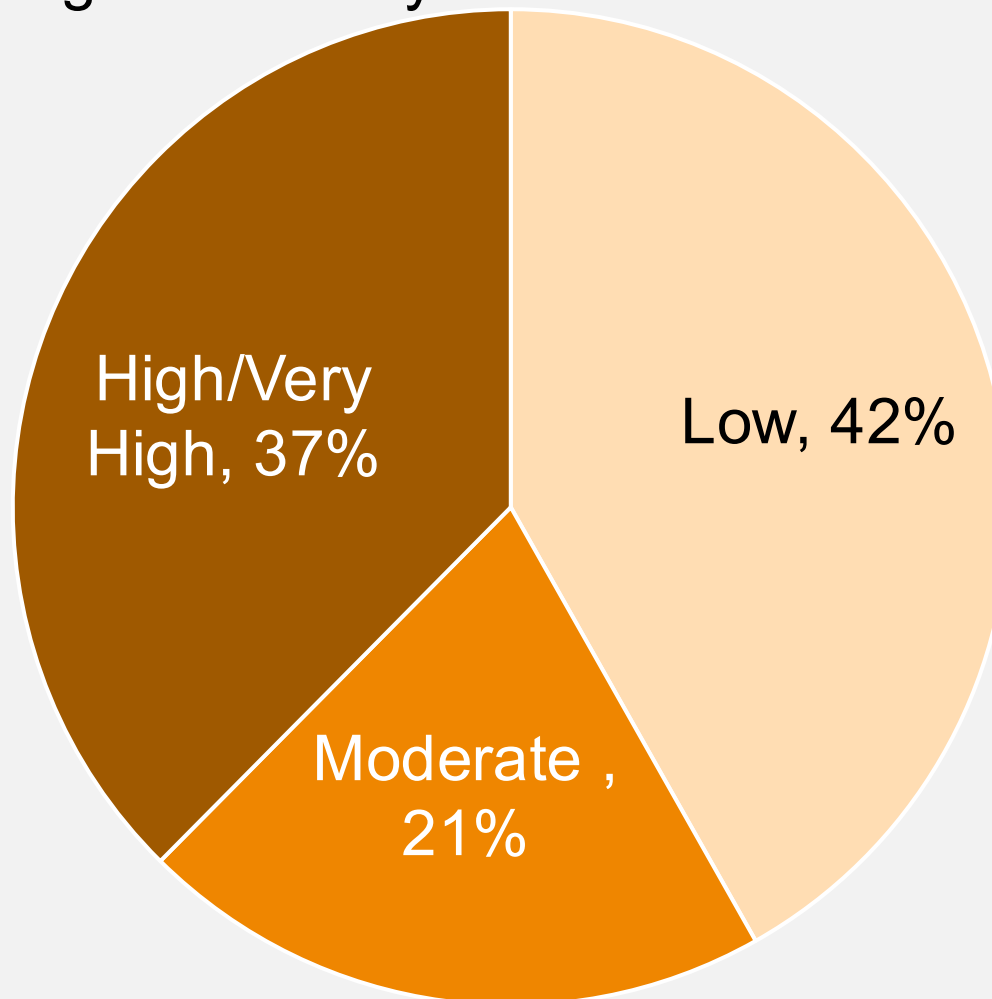
# PREVALENCE OF WHO DRINKING RISK LEVELS DURING PREGNANCY

Fig. 1: No Alcohol Use v. Any Alcohol Use



# PREVALENCE OF WHO DRINKING RISK LEVELS DURING PREGNANCY

Fig. 2: Severity of Alcohol Use Risk



## **AIM 2**

**Examine associations between WHO drinking risk across maternal health outcomes among pregnant women.**

# DATA ANALYSIS

- Complex samples general linear models assessed associations of drinking risk across maternal health outcomes
  - Number of emergency room (ER) visits (HEALTH)
  - Difficulty participating in social activities (Community)
  - Difficulty completing household responsibilities (HHR; Home)
  - Functional impairment (FI; Purpose).
- Models controlled for sociodemographic variables (e.g., age, race, sexual identity, education, employment).

# RESULTS

**WHO drinking risk was not significantly associated with any maternal health related outcome.**

- All models were statistically significant ( $p < .05$ ):
  - ER visits: ~12% of the variance
  - Social Impairment: ~9% of the variance.
  - HHR Impairment: ~13.6% of the variance.
  - Functional Impairment: ~13.6% of the variance.
- Maternal health outcomes were predicted by sociodemographic variables rather than alcohol risk alone.

# DISCUSSION

- Abstinence during pregnancy is the safest option
  - Reduced drinking may positively influence maternal health for people unable to abstain or who may not know they are pregnant yet.
- Drinking Risk Prevalence:
  - 8% of pregnant women reported ANY drinking in the past month.
  - 37% reported high/very high drinking risk
  - 21% reported moderate drinking risk
  - 42% reported low drinking risk
- Sociodemographic variables predicted maternal health outcomes rather than alcohol use alone.

## **FUTURE DIRECTIONS**

- Tailored interventions and harm reduction approaches are needed for women who continue to drink during pregnancy.
- Future studies should continue to assess varying drinking risk during pregnancy, especially in populations with alcohol use disorder.

**THANK YOU!**

## SUPPLEMENTAL TABLES

Sample Demographics		WHO Drinking Risk Levels				Total
		<i>none</i>	<i>mild</i>	<i>mod</i>	<i>severe</i>	
<b>Age</b>	18-25	728	9	7	29	773
	26-34	812	36	19	23	890
	35-49	261	21	8	6	296
<b>Race</b>	White	1028	42	21	27	1118
	Black/African American	232	10	4	15	261
	Other	126	1	1	3	131
	2 or more races	74	5	1	5	85
	Hispanic	390	11	7	12	420
<b>Employment</b>	full-time	761	36	12	25	834
	part-time	285	13	9	9	316
	unemployed	112	2	2	7	123
	other	682	18	11	19	730
<b>Education</b>	>HS/no diploma	266	5	3	13	287
	HS/GED	456	12	4	19	491
	Some college	323	9	5	12	349
	Associates deg	153	6	1	5	165
	College Grad/Higher	652	37	21	13	723

Q: During the past 12 months, that is since [DATEFILL], how many different times have you been treated in an emergency room for any reason?

<b>WHO Drinking Risk Levels</b>	Mean	N	Std. Deviation
<i>none</i>	.78	<b>1817</b>	1.751
<i>mild</i>	.52	<b>69</b>	1.431
<i>moderate</i>	.85	<b>34</b>	3.258
<i>high/veryhigh</i>	1.31	<b>62</b>	2.280
<i>Total</i>	.79	1982	1.797

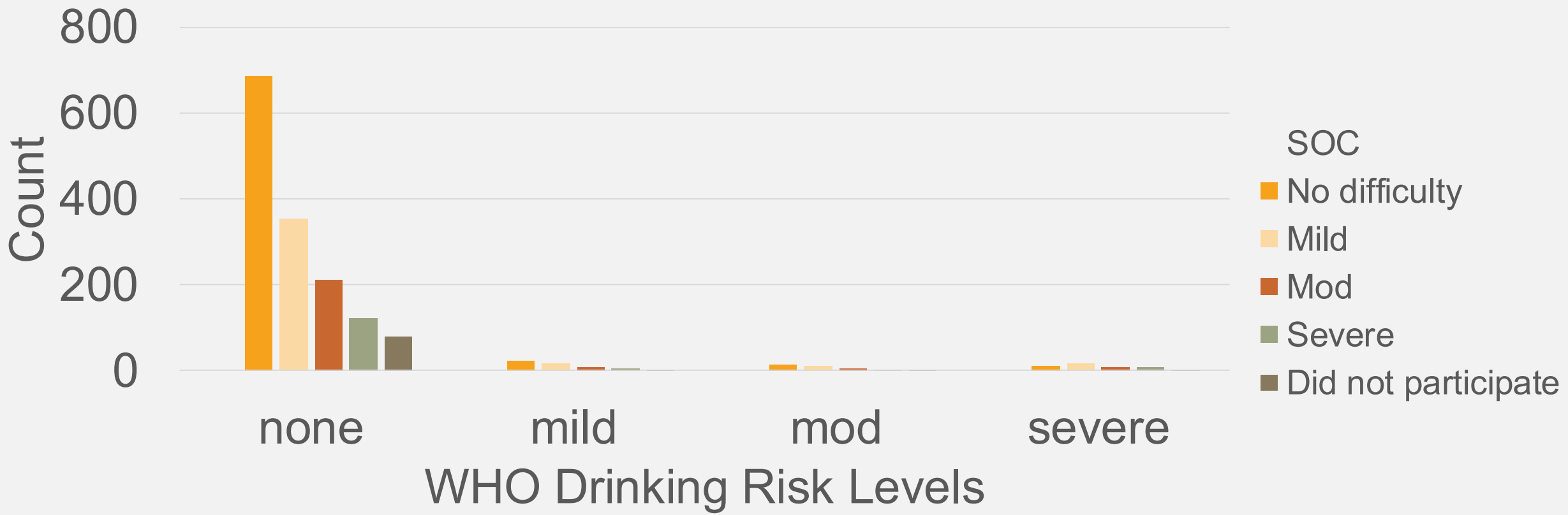
Q: Difficulty completing household responsibilities in the one month when your mental health was at its worst, in the past 12 months (1-No Difficulty to 5-Did not take care of household responsibilities)

Difficulty Completing HHR by WHO Drinking Risk



Q: Difficulty participating in social activities in the one month when your mental health was at its worst in the past 12 months (1- No difficulty to 5-Did not participate in social activities)

### Difficulty Participating in Social Activities by WHO Drinking Risk



# WHODAS total score

<b>WHO Drinking Risk Levels</b>	<b>Mean</b>	<b>N</b>	<b>Std. Deviation</b>
<i>none</i>	5.09	<b>1765</b>	6.141
<i>mild</i>	6.74	<b>66</b>	7.041
<i>mod</i>	5.44	<b>34</b>	5.445
<i>high/veryhigh</i>	7.50	<b>58</b>	7.165
<b>Total</b>	<b>5.23</b>	<b>1923</b>	<b>6.211</b>

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