

Patterns of Perinatal Depressive Symptoms in California

Findings from the Maternal and Infant Health Assessment (MIHA) Survey

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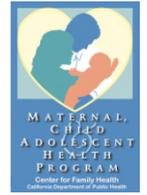
Surveillance, Assessment and Program Development Section
Maternal, Child and Adolescent Health Program
Center for Family Health

MCAH Action Education Day
May 23, 2013





Outline



- **MIHA Survey Overview**
 - Background and methods
 - MIHA questions on prenatal and postpartum depressive symptoms
- **Prevalence of prenatal and postpartum depressive symptoms in California**
- **Characteristics of women with prenatal depressive symptoms**
 - Social factors that may impact the health of mom and baby
 - Behaviors that may impact the health of mom and baby
 - Points of contact with the health care system
- **MIHA Dissemination**
 - Publications and future plans

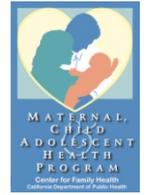
MIHA Survey Overview

California Department of
Public Health





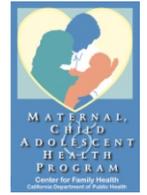
What Is the MIHA Survey?



- **Annual population-based survey of women with recent live birth**
- **Addresses maternal and infant social and economic conditions, health behaviors, health status and access to care before, during and after a recent pregnancy**
- **Provides information not available from other sources to develop, target and evaluate public health efforts**
- **Modeled after the Pregnancy Risk Assessment Monitoring System (PRAMS) conducted by the Centers for Disease Control and Prevention in 37 other states**
- **Collaborative effort of**
 - Maternal, Child and Adolescent Health (MCAH) Program
 - California Women, Infants and Children (WIC) Program
 - The University of California, San Francisco



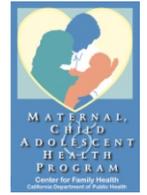
MIHA Methods



- **Sample from birth certificates for Feb - May births, excluding:**
 - Non-residents
 - Women < 15 years old
 - Multiple births > 3
- **Designed to represent all women giving birth in calendar year who meet inclusion criteria**
- **Questionnaire mailed in English and Spanish with telephone follow-up to non-respondents**
- **~6,800 women participated in 2010, with a response rate of 69%**
- **Most women complete survey 2 – 7 months postpartum**



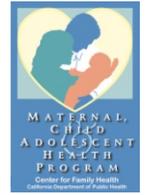
Development of MIHA Questions on Depressive Symptoms



- **Based on DSM-IV criteria and validated screening tools**
 - Primary Care Evaluation of Mental Disorders (Prime-MD)
 - Patient Health Questionnaire-2 (PHQ-2)
 - WHO Composite International Diagnostic Interview (CIDI)
- **Adapted for MIHA survey**
- **Not diagnostic**
- **California prevalence of depressive symptoms using MIHA is similar to prevalence of prenatal and postpartum depression reported in the literature**



MIHA Questions on *Prenatal Depressive Symptoms*



During your pregnancy, did you ever have 2 weeks or longer when you felt sad, empty, or depressed for most of the day?

- Yes
- No

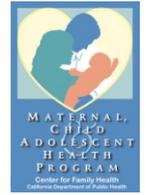
During your pregnancy, did you ever have 2 weeks or longer when you lost interest in most things you usually enjoyed (like work, hobbies, or personal relationships)?

- Yes
- No

***Prenatal Depressive Symptoms* defined as “Yes” to both questions.**



MIHA Questions on *Postpartum Depressive Symptoms*



Since your most recent birth, have you ever had 2 weeks or longer when you felt sad, empty, or depressed for most of the day?

- Yes
- No

Since your most recent birth, have you ever had 2 weeks or longer when you lost interest in most things you usually enjoyed (like work, hobbies, or personal relationships)?

- Yes
- No

***Postpartum Depressive Symptoms* defined as “Yes” to both questions.**

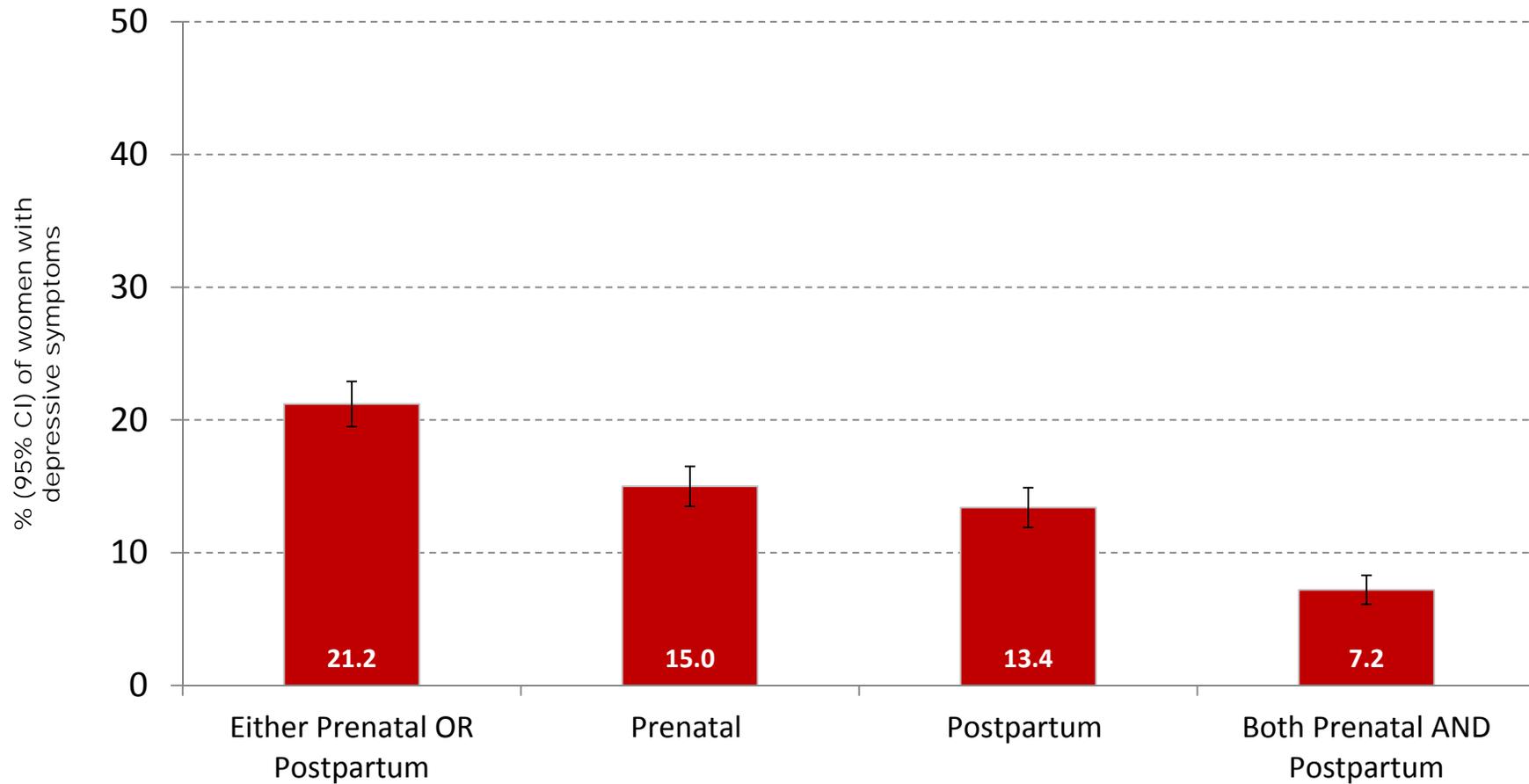
Prevalence of Prenatal and Postpartum Depressive Symptoms

MIHA 2010

California Department of
Public Health

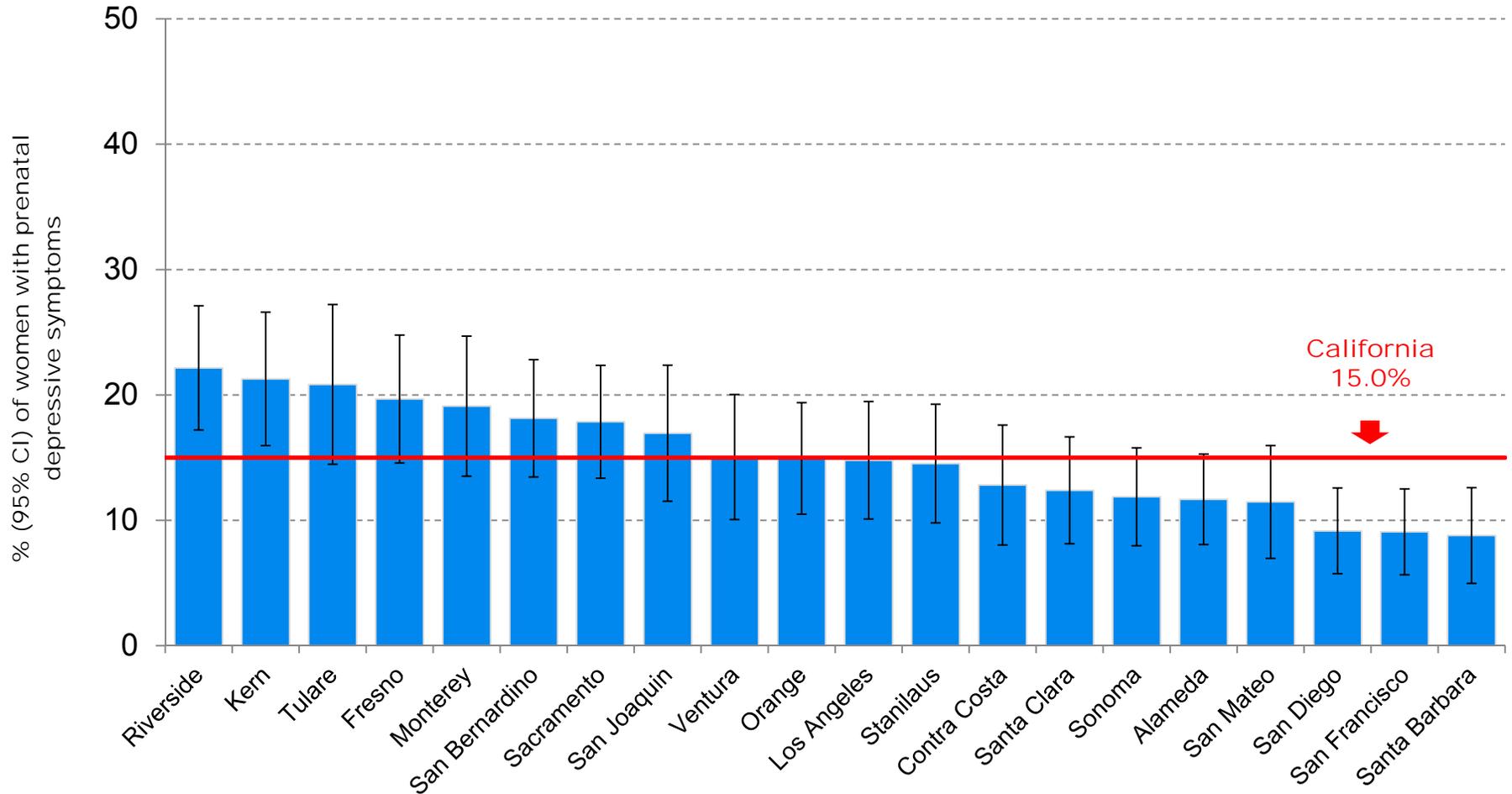


Depressive Symptoms by Prenatal or Postpartum Time Period



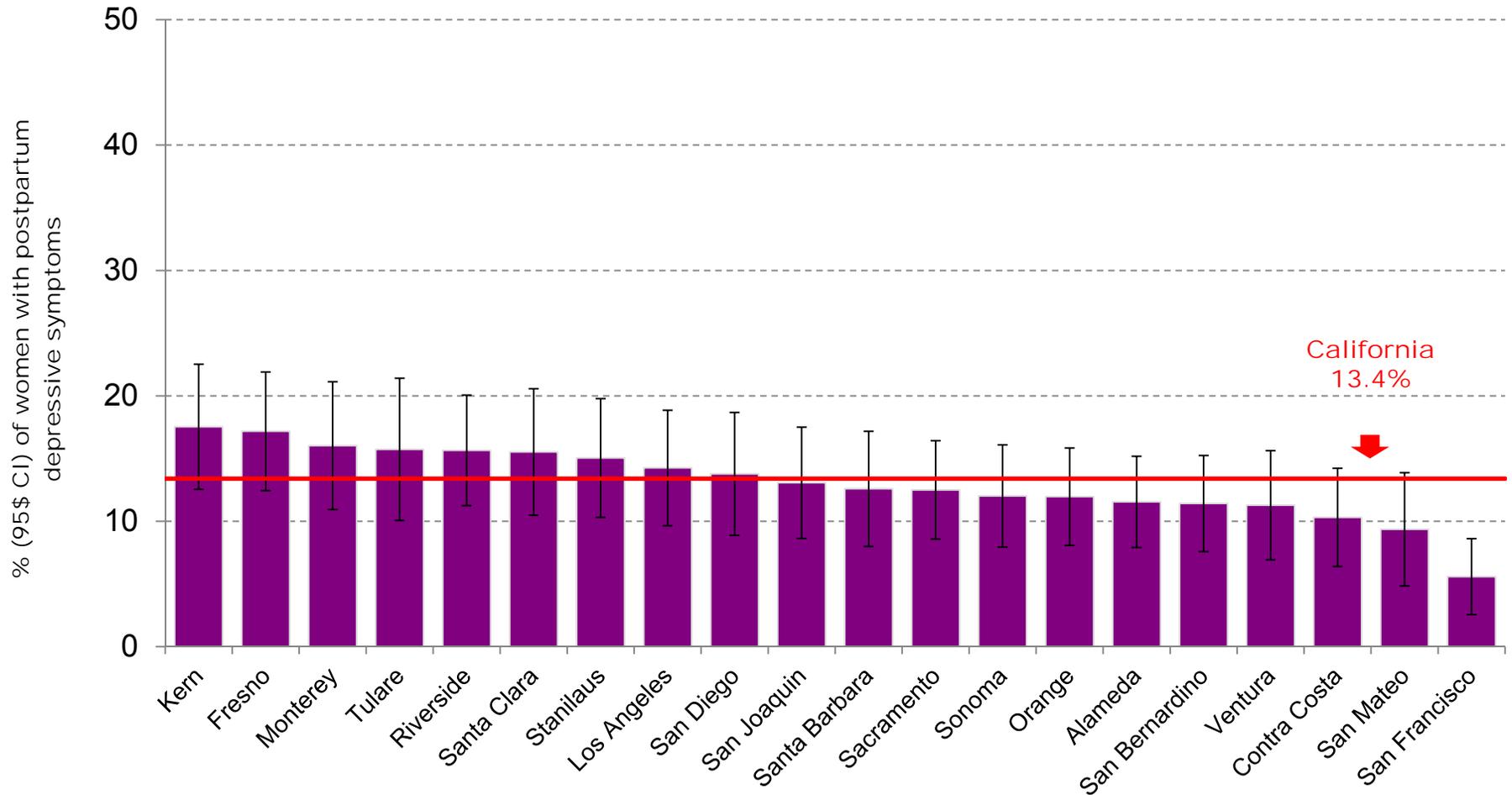
The Maternal and Infant Health Assessment (MIHA) is an annual population based survey of women with a recent live birth with a sample size of n=6,817 in 2010. Percentages and 95% confidence intervals are weighted to represent all women with a live birth in 2010 in California.

Prenatal Depressive Symptoms by County



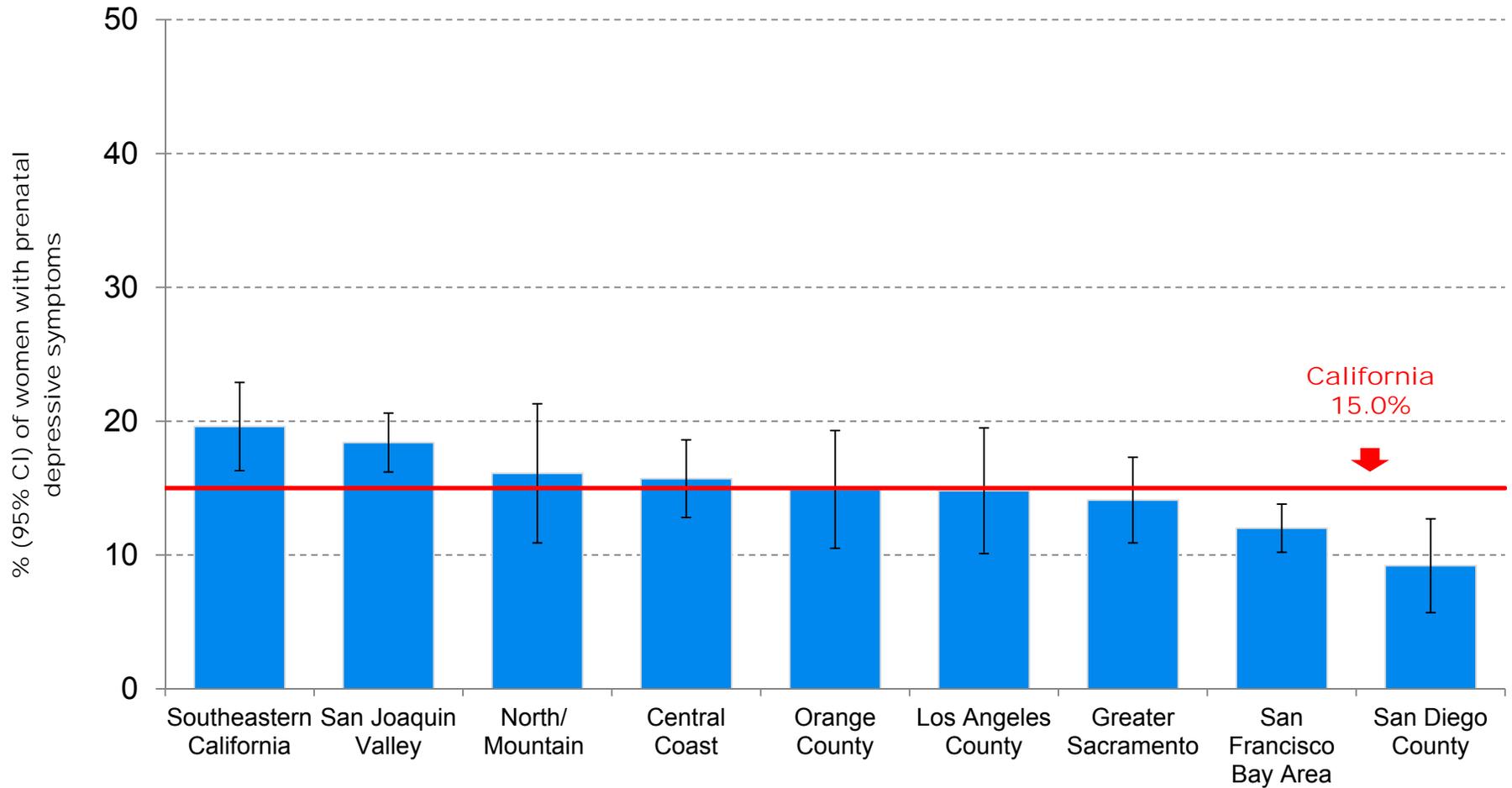
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Postpartum Depressive Symptoms by County



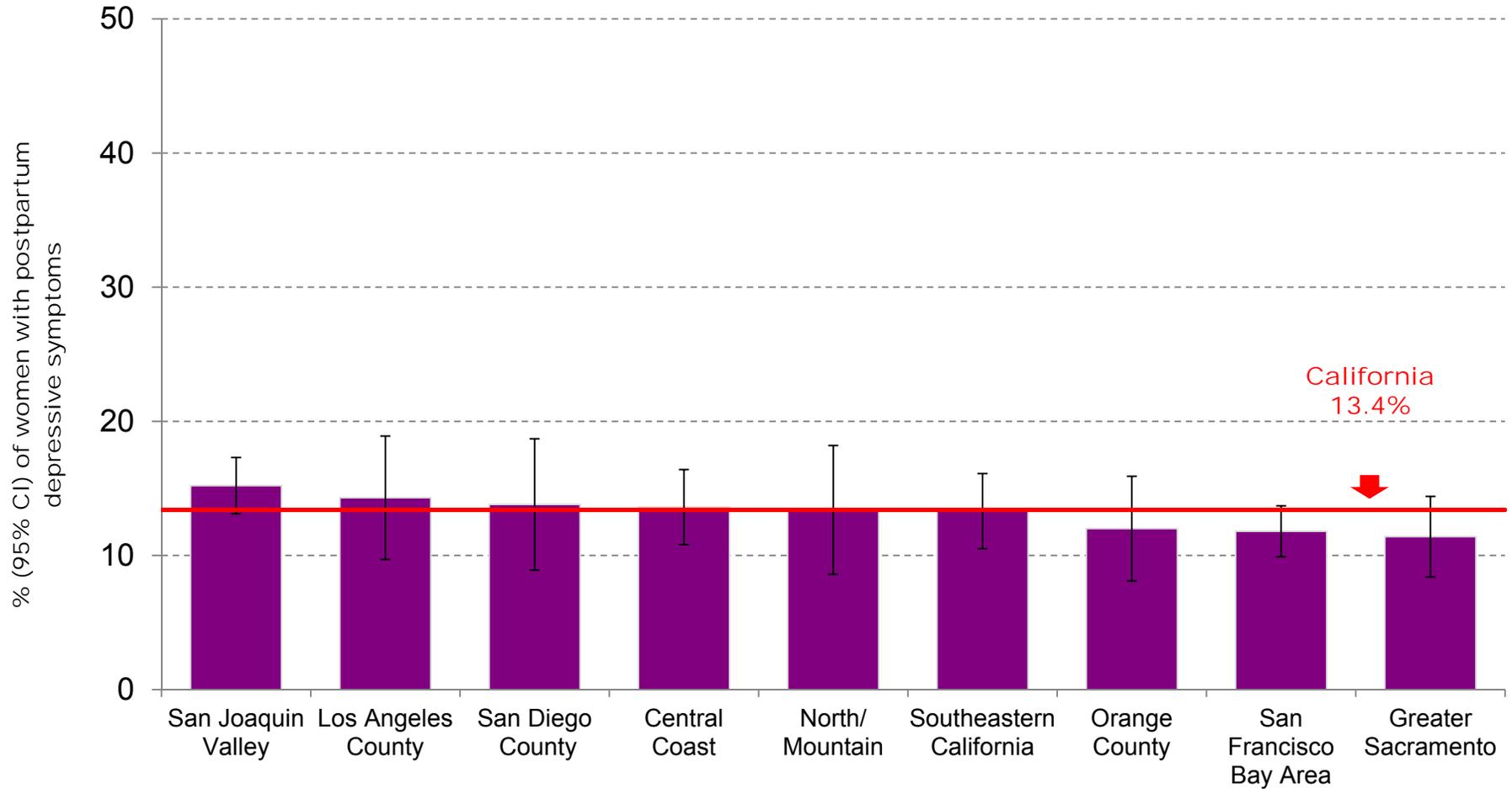
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Prenatal Depressive Symptoms by Region



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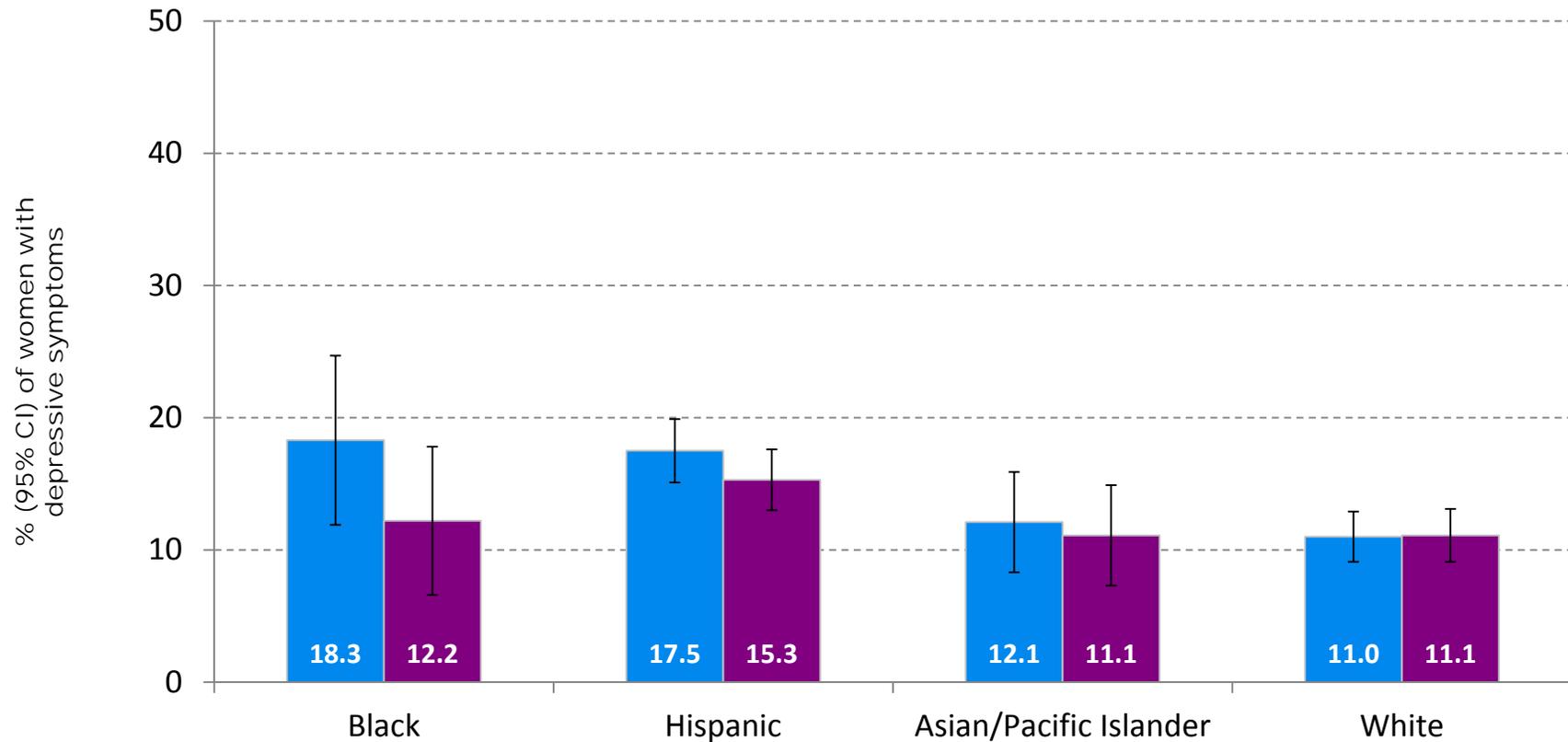
Postpartum Depressive Symptoms by Region



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Depressive Symptoms by Race/Ethnicity

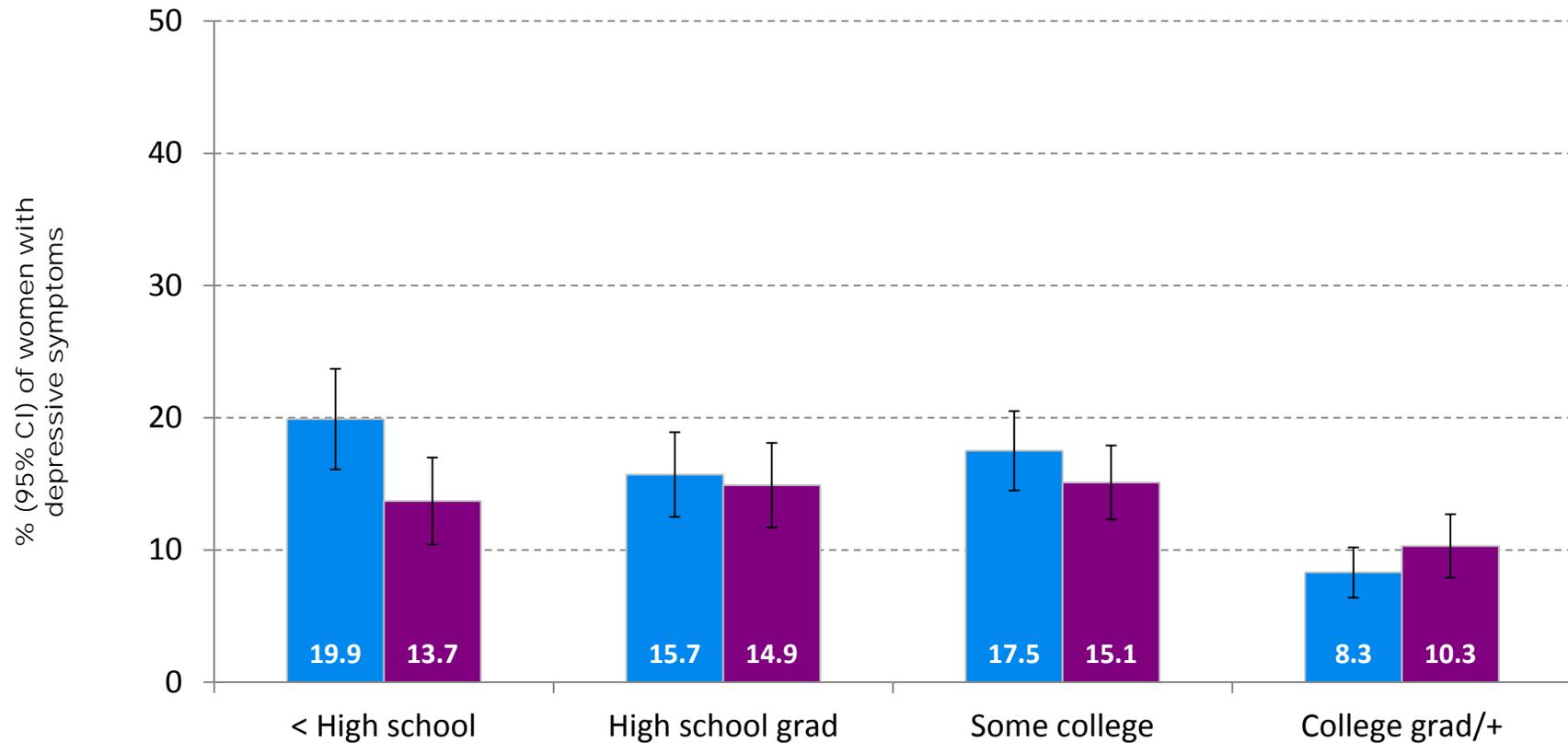
■ Prenatal DS ■ Postpartum DS



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Depressive Symptoms by Education

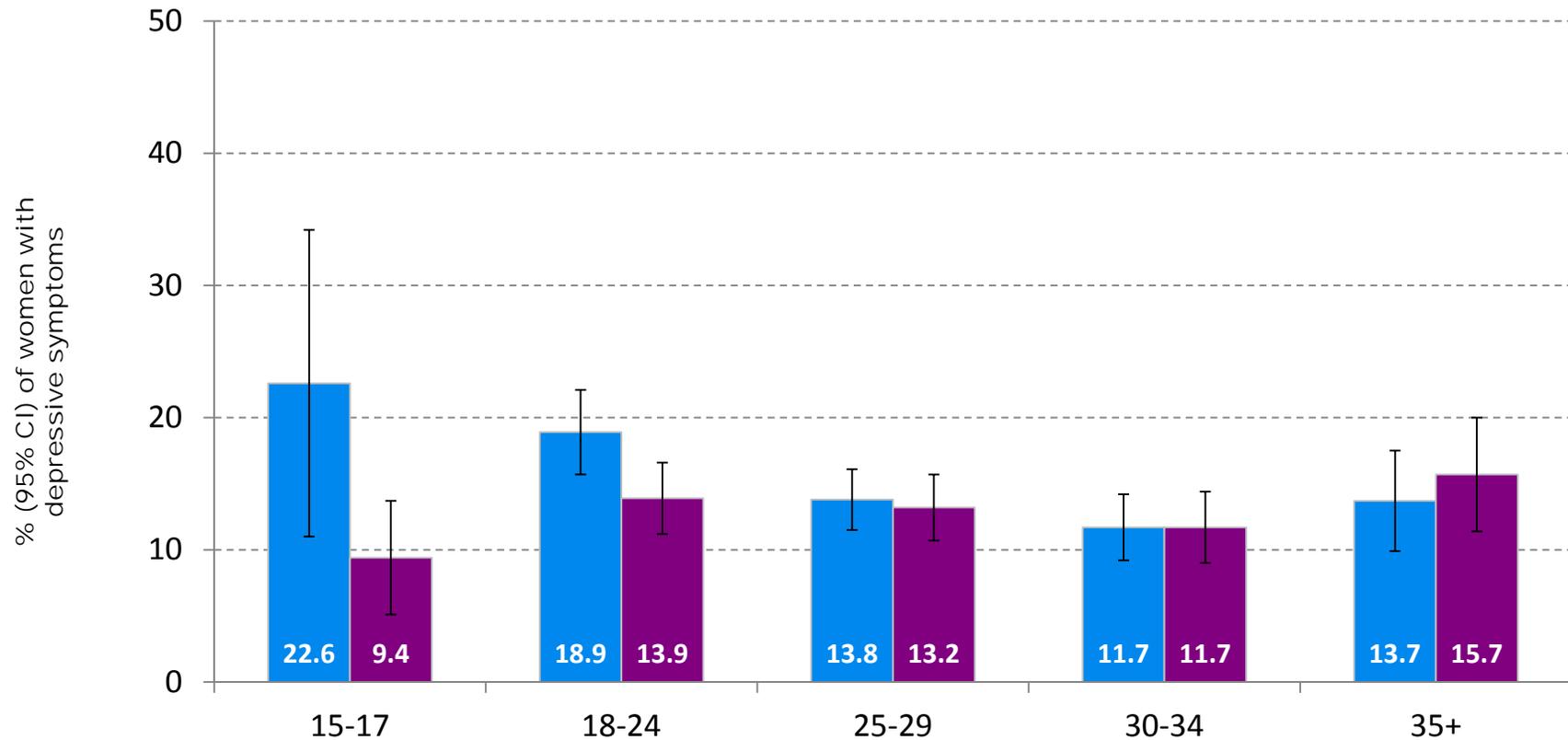
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Depressive Symptoms by Age

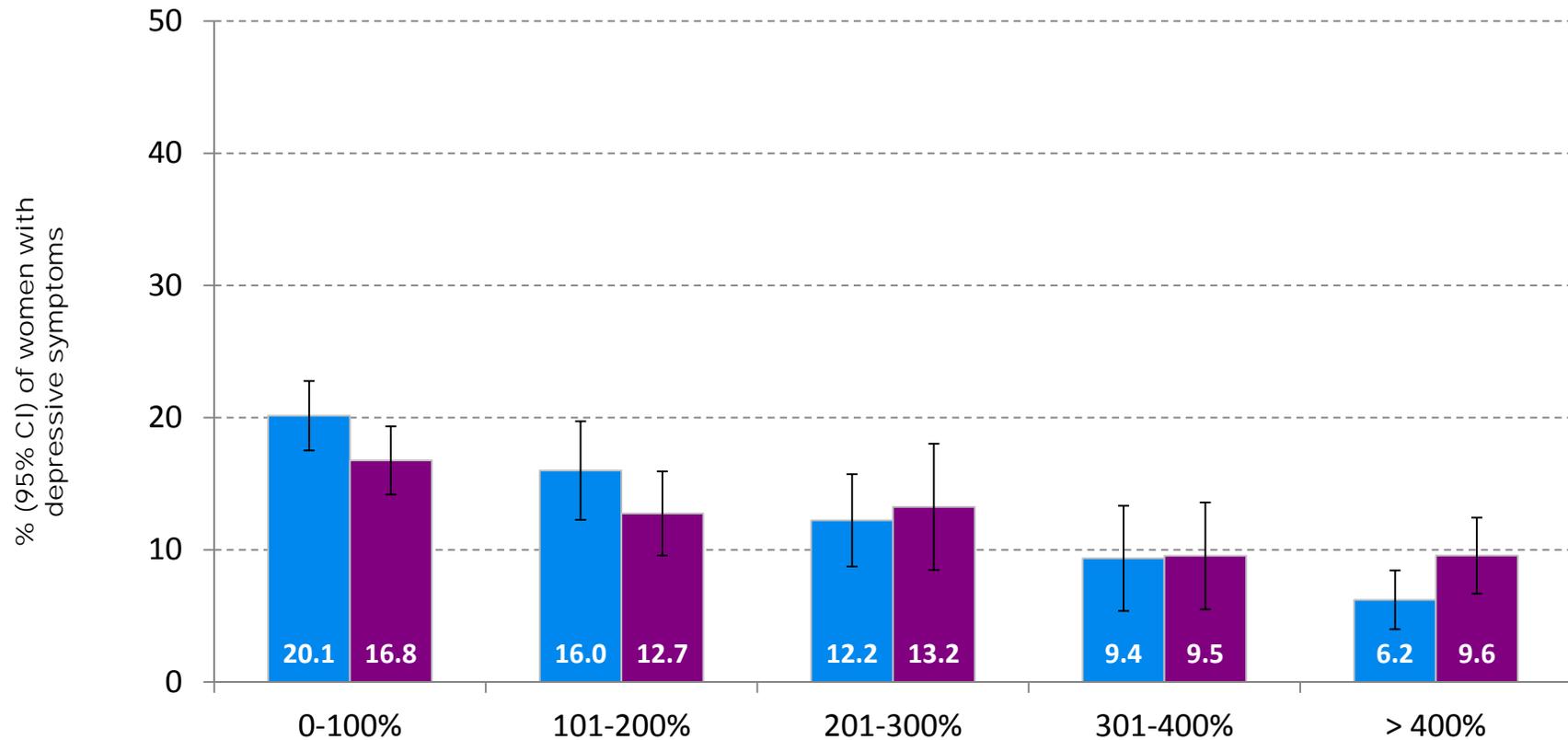
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Depressive Symptoms by Income (% FPG)

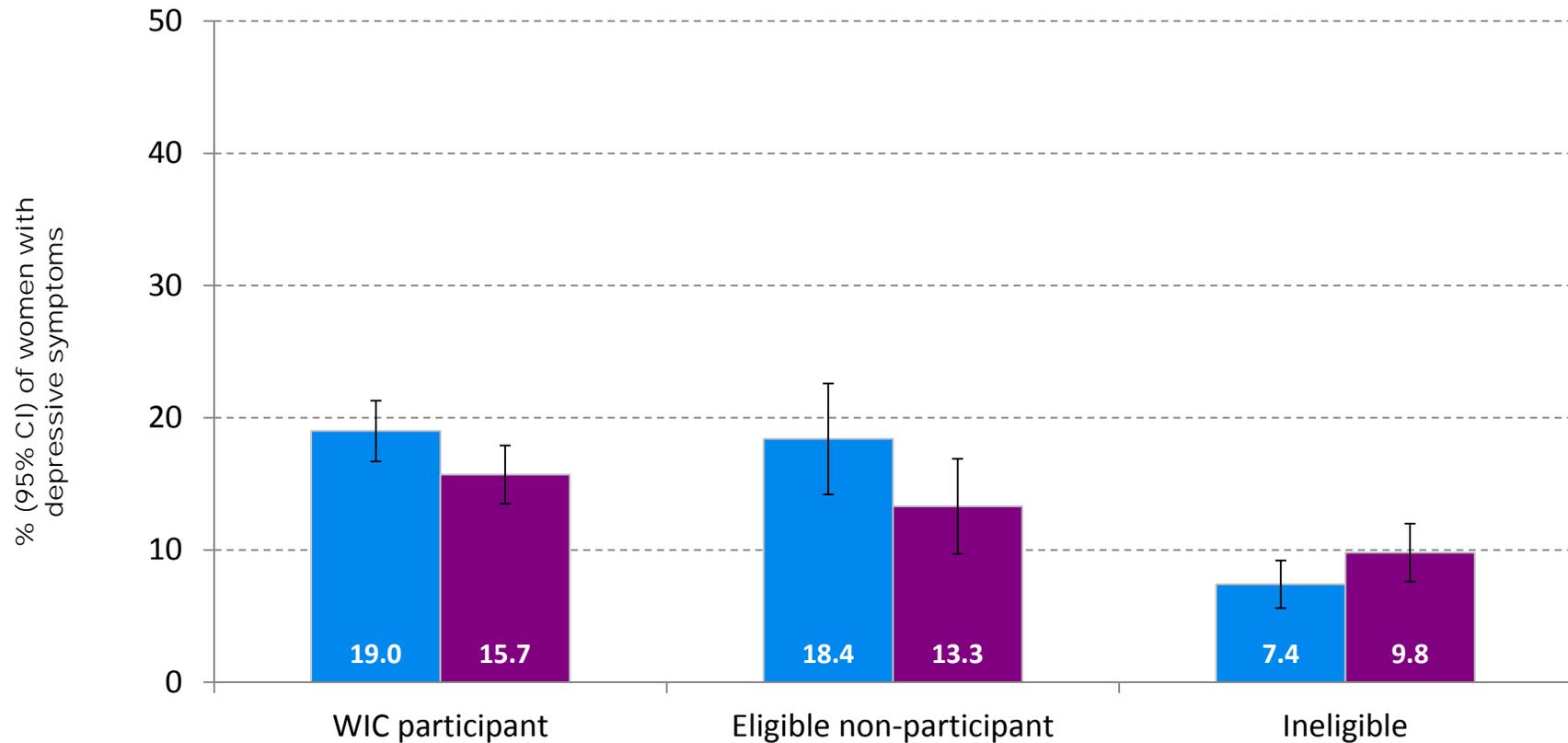
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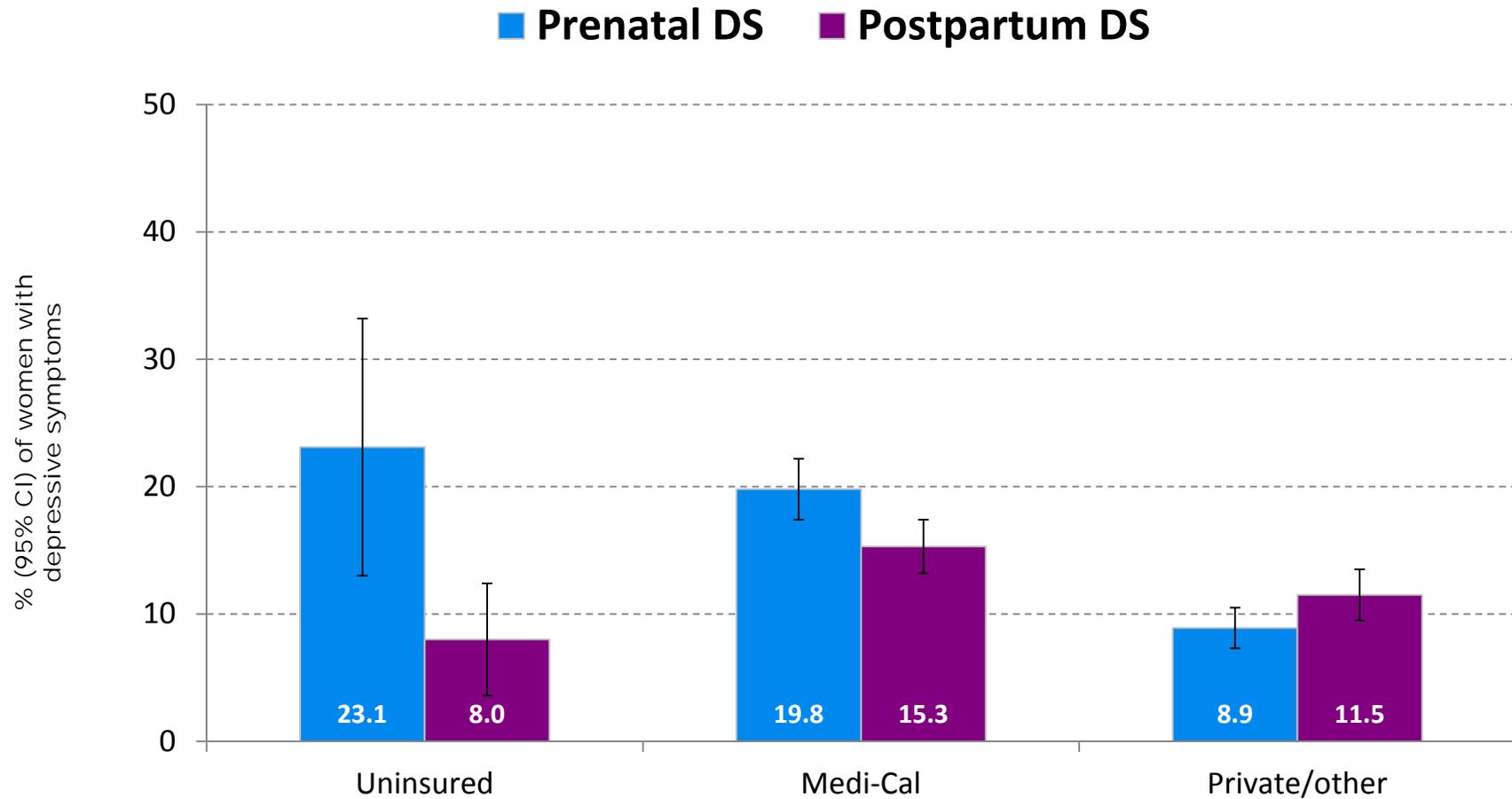
Depressive Symptoms by Prenatal WIC status

■ Prenatal DS ■ Postpartum DS



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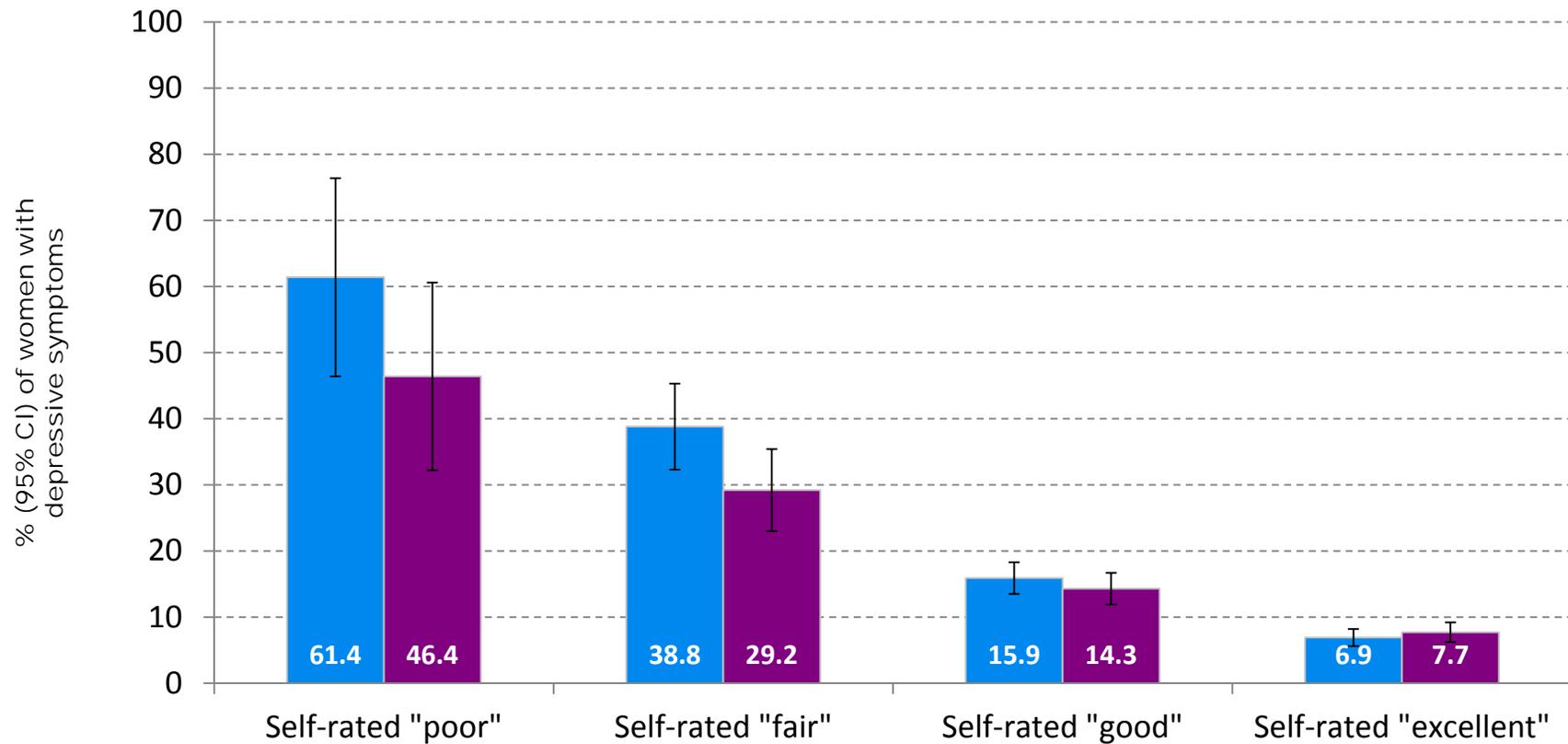
Depressive Symptoms by Prenatal Health Insurance



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Depressive Symptoms by Mental Health before Pregnancy

■ Prenatal DS ■ Postpartum DS

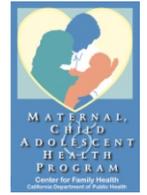


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Summary

Prevalence of Prenatal and Postpartum Depressive Symptoms



- **Prevalence patterns are similar for prenatal and postpartum depressive symptoms**
- **Higher prevalence of depressive symptoms**
 - Hispanic and Black women
 - Women with less education and lower income
 - Women in WIC and covered by Medi-Cal
 - Women with prior mental health symptoms
- **Regional variation is most apparent for prenatal depressive symptoms with higher rates in the Central Valley and Southeastern California**
- **Prevalence of postpartum depressive symptoms does not vary significantly across regions**

Characteristics of Women with Prenatal Depressive Symptoms

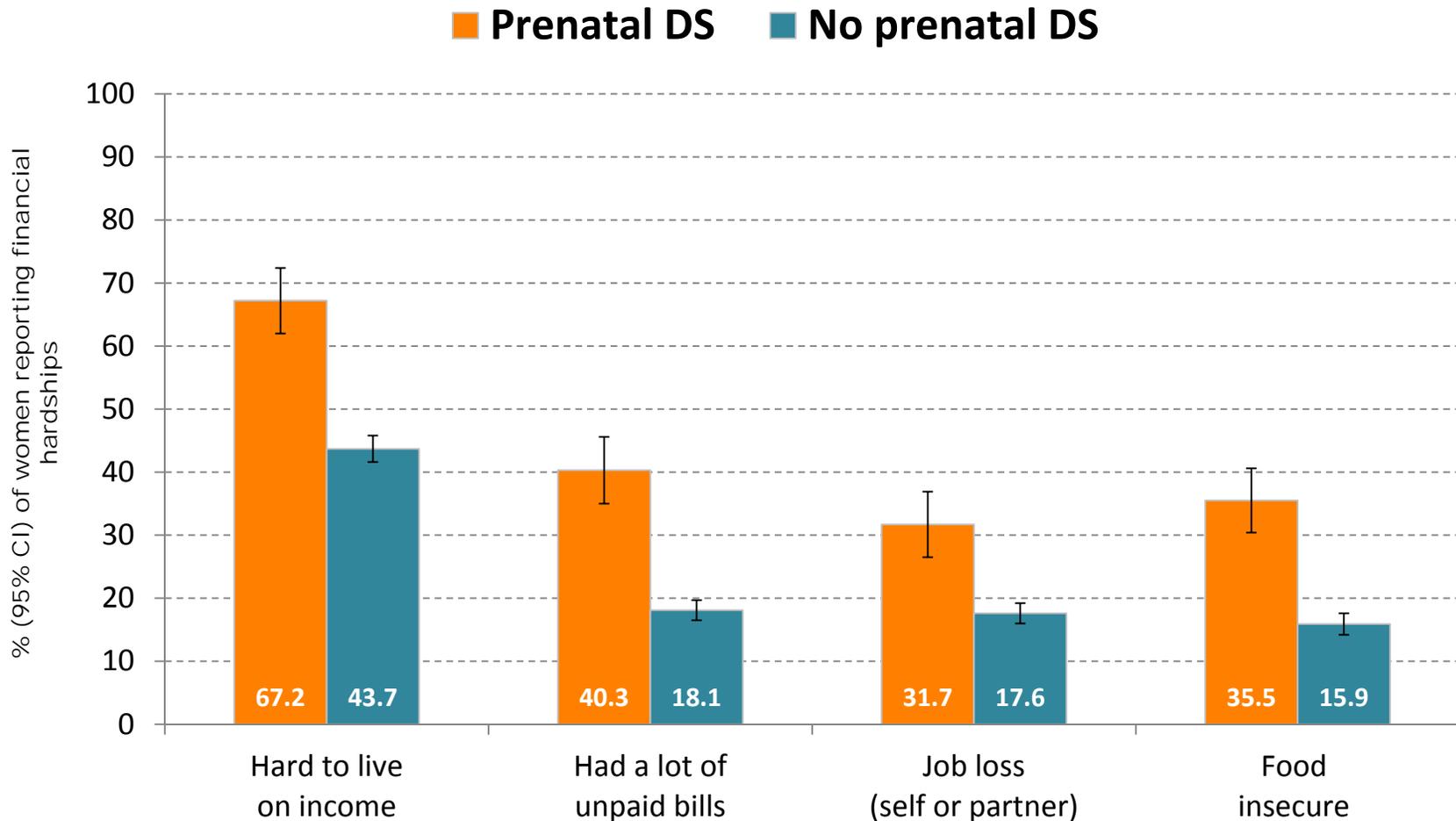
MIHA 2010

Social Factors that May Impact the Health of Mom and Baby

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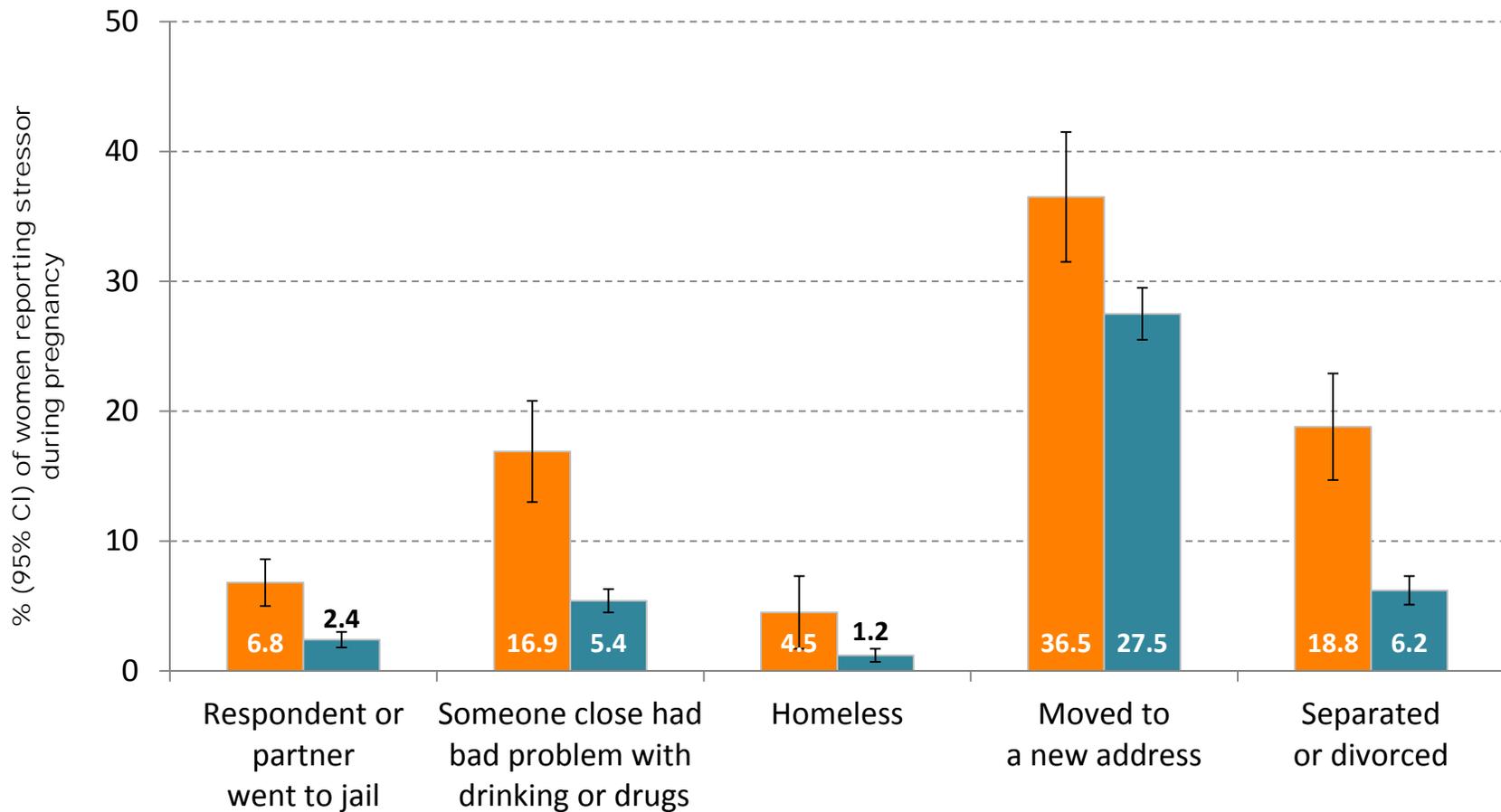
Financial Hardships during Pregnancy among Women with & without Prenatal Depressive Symptoms



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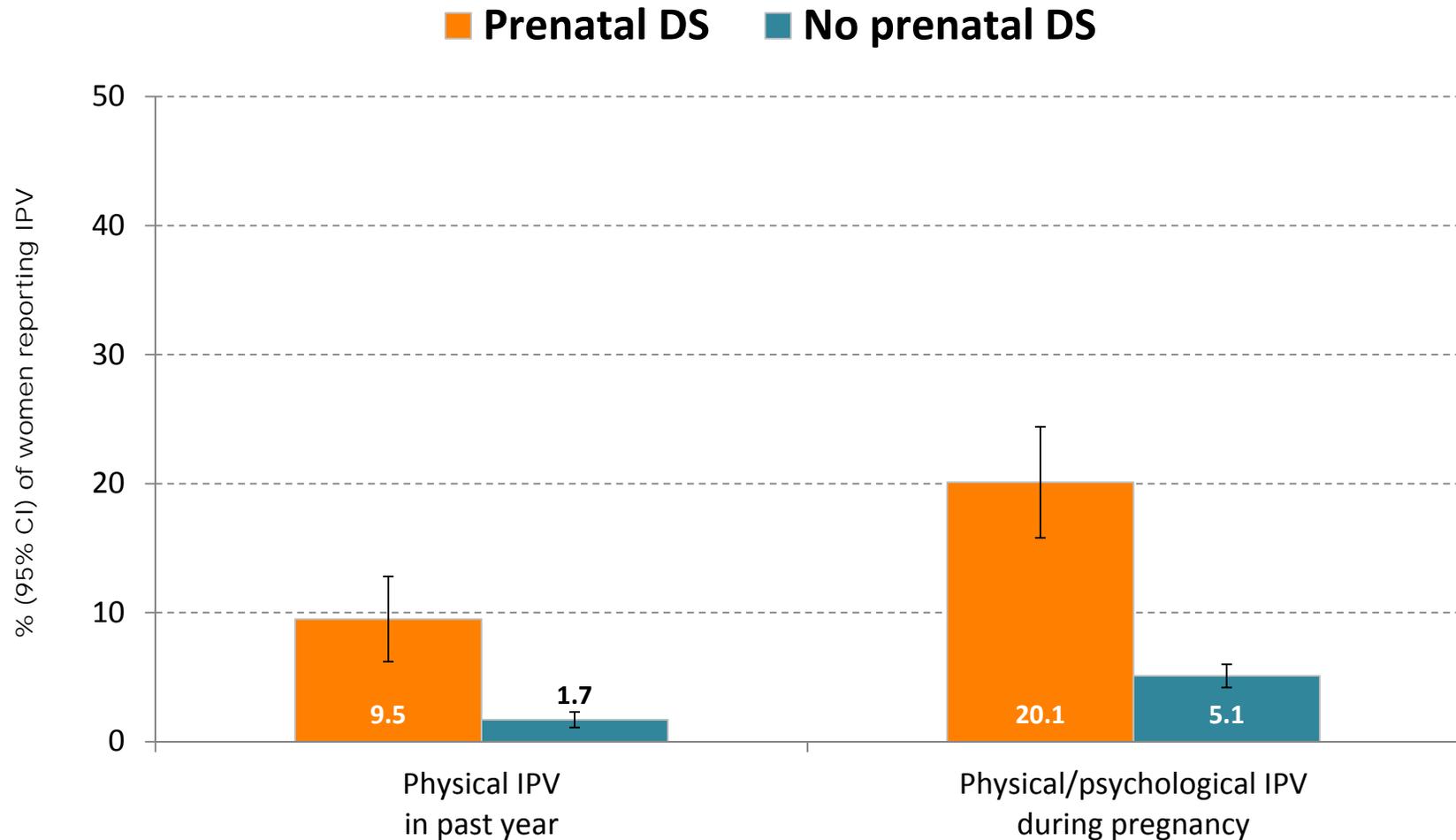
Stressors during Pregnancy among Women with & without Prenatal Depressive Symptoms

■ Prenatal DS ■ No prenatal DS



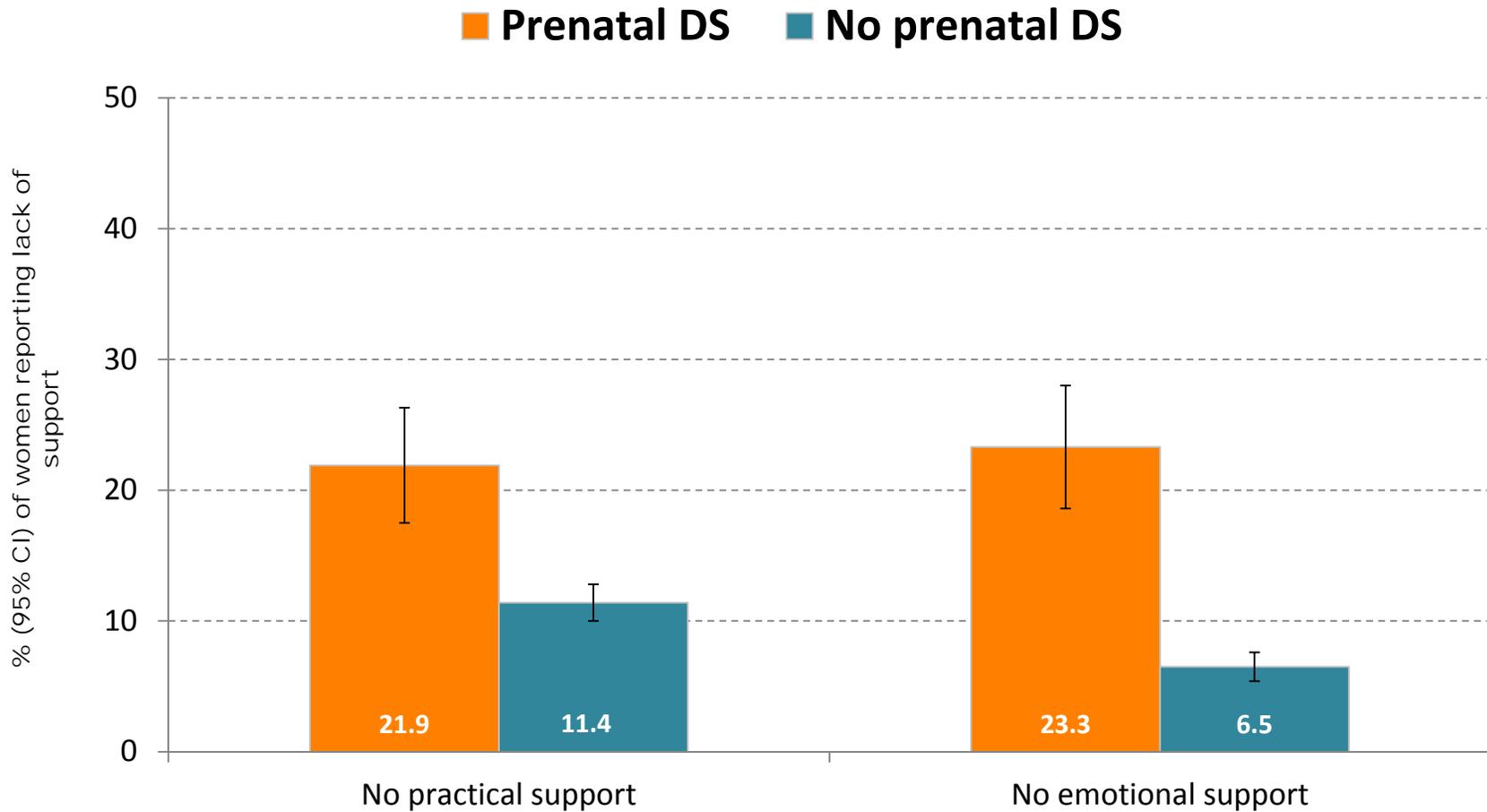
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Intimate Partner Violence (IPV) among Women with & without Prenatal Depressive Symptoms



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Lack of Support during Pregnancy among Women with & without Prenatal Depressive Symptoms



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Characteristics of Women with Prenatal Depressive Symptoms

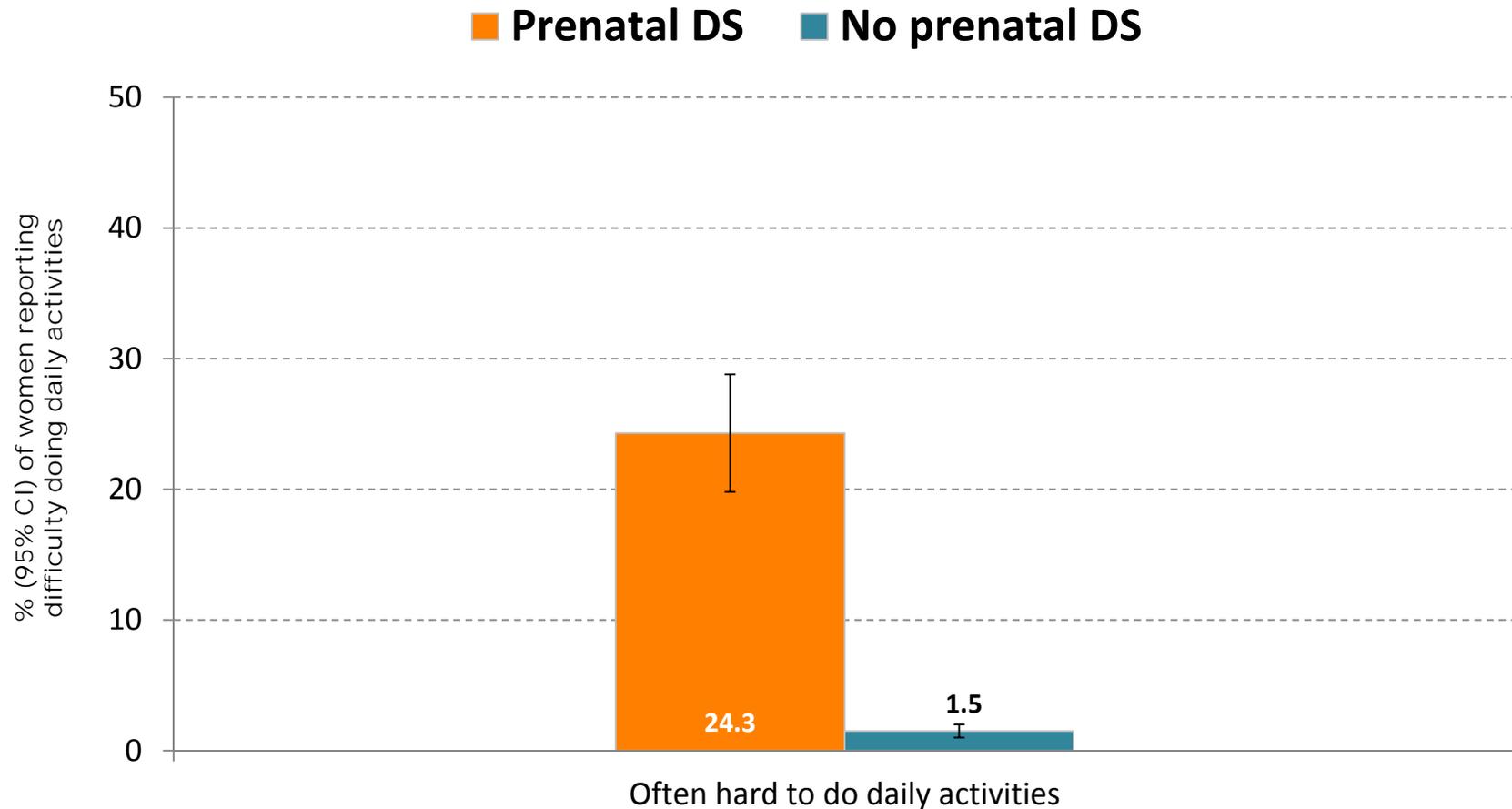
MIHA 2010

Behaviors that May Impact the Health of Mom and Baby

California Department of
Public Health

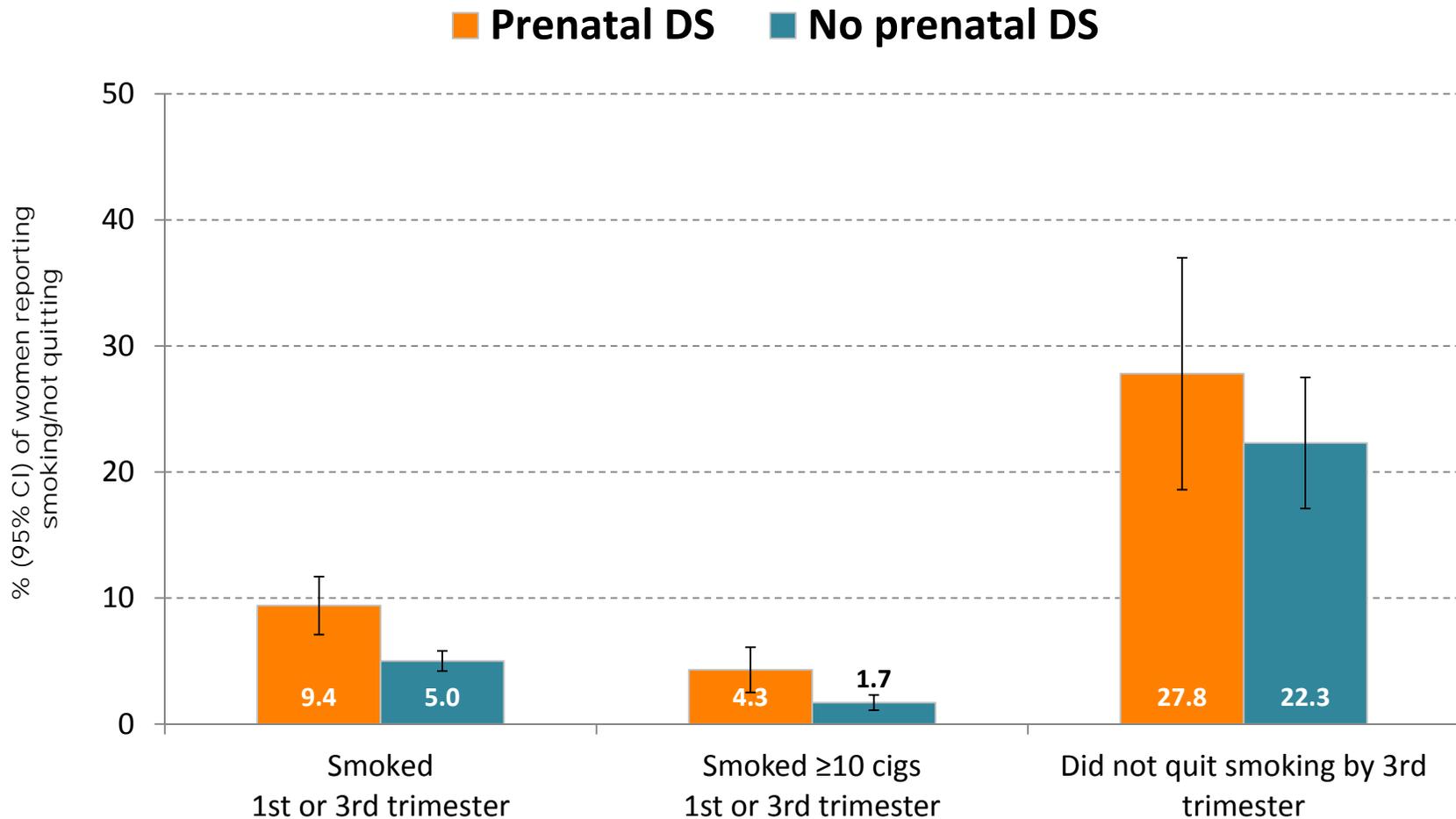


Difficulty Doing Daily Activities due to Emotional Problems among Women with & without Prenatal Depressive Symptoms



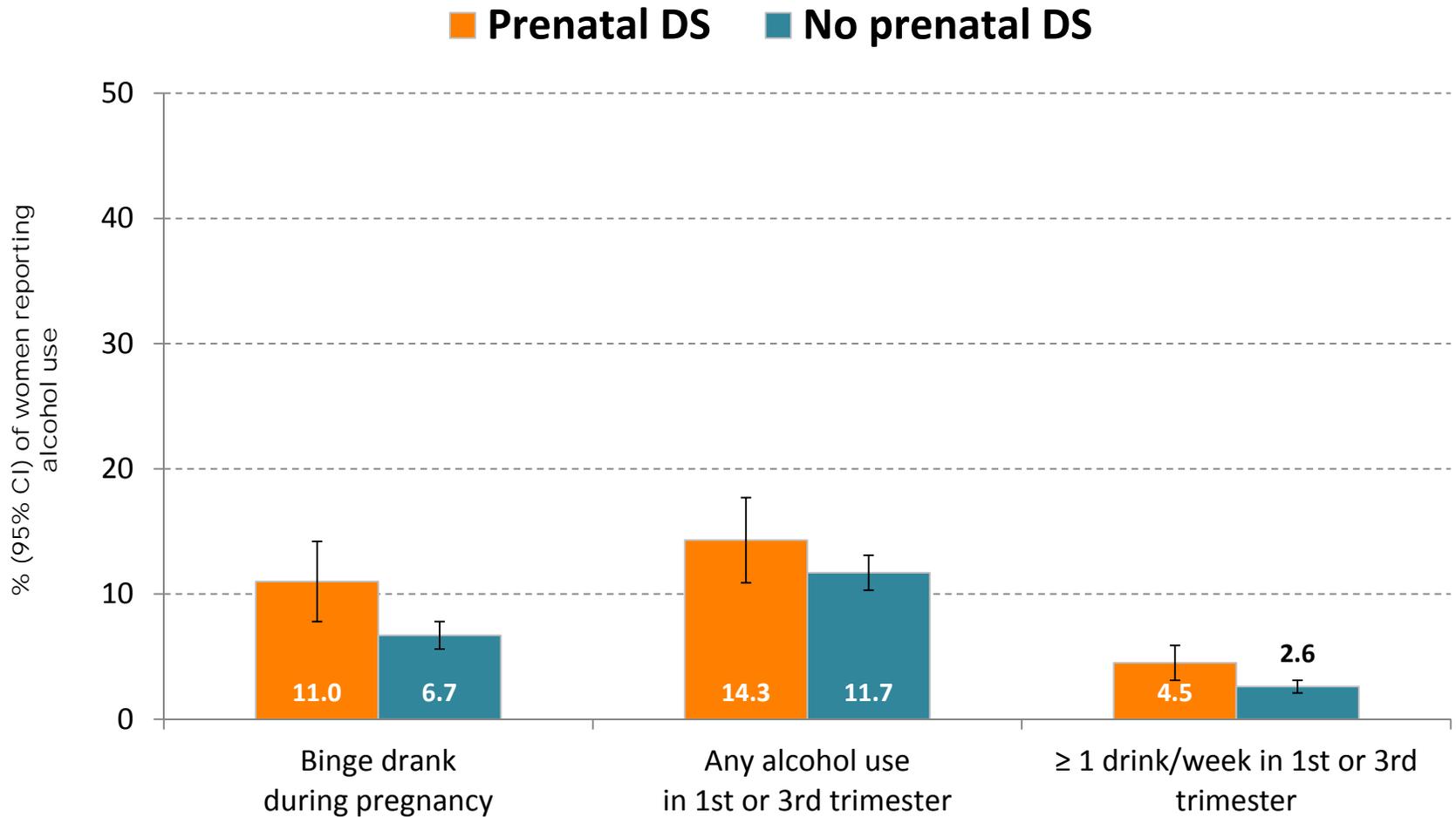
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Smoking among Women with & without Prenatal Depressive Symptoms



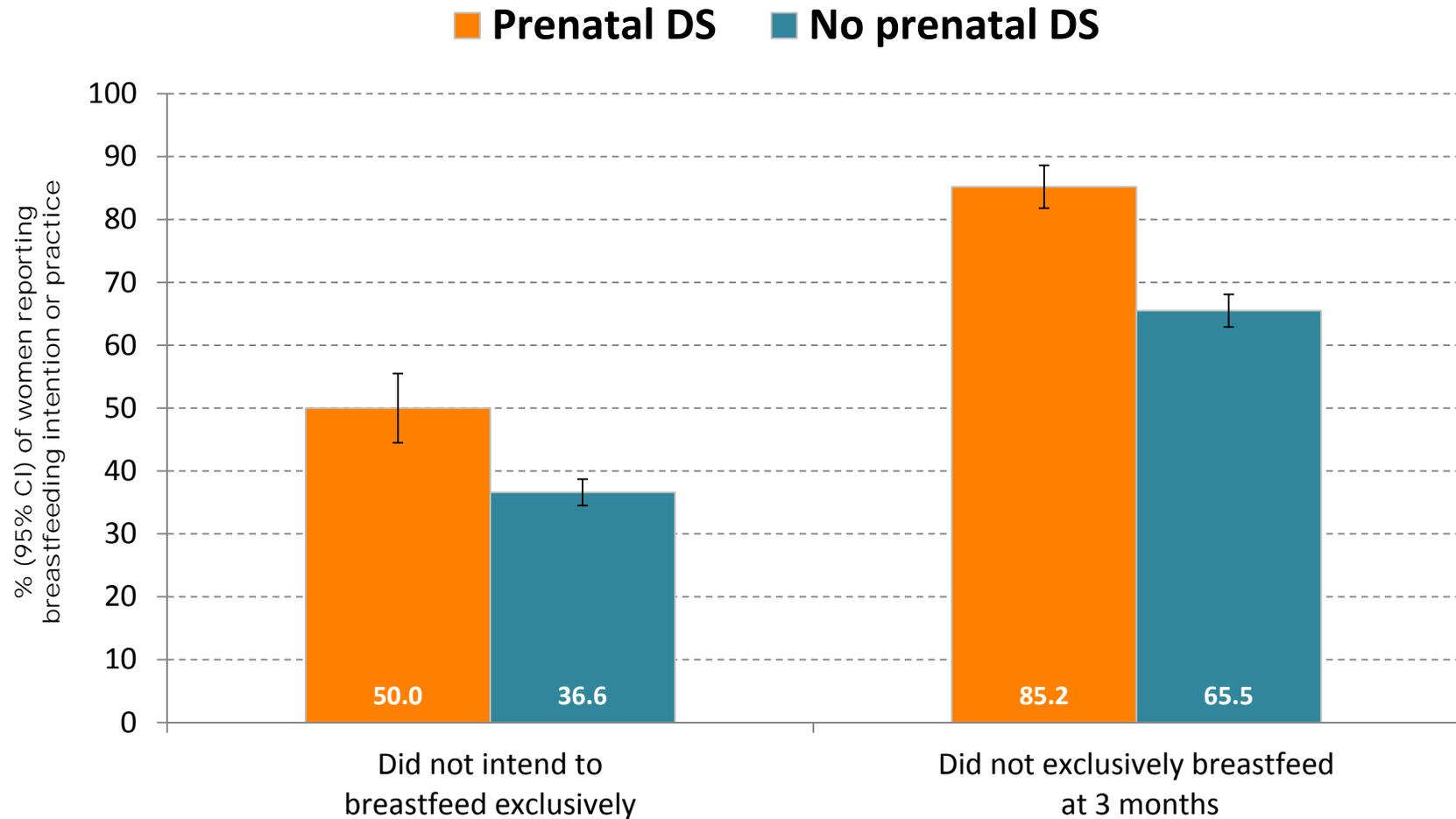
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Alcohol Use among Women with & without Prenatal Depressive Symptoms



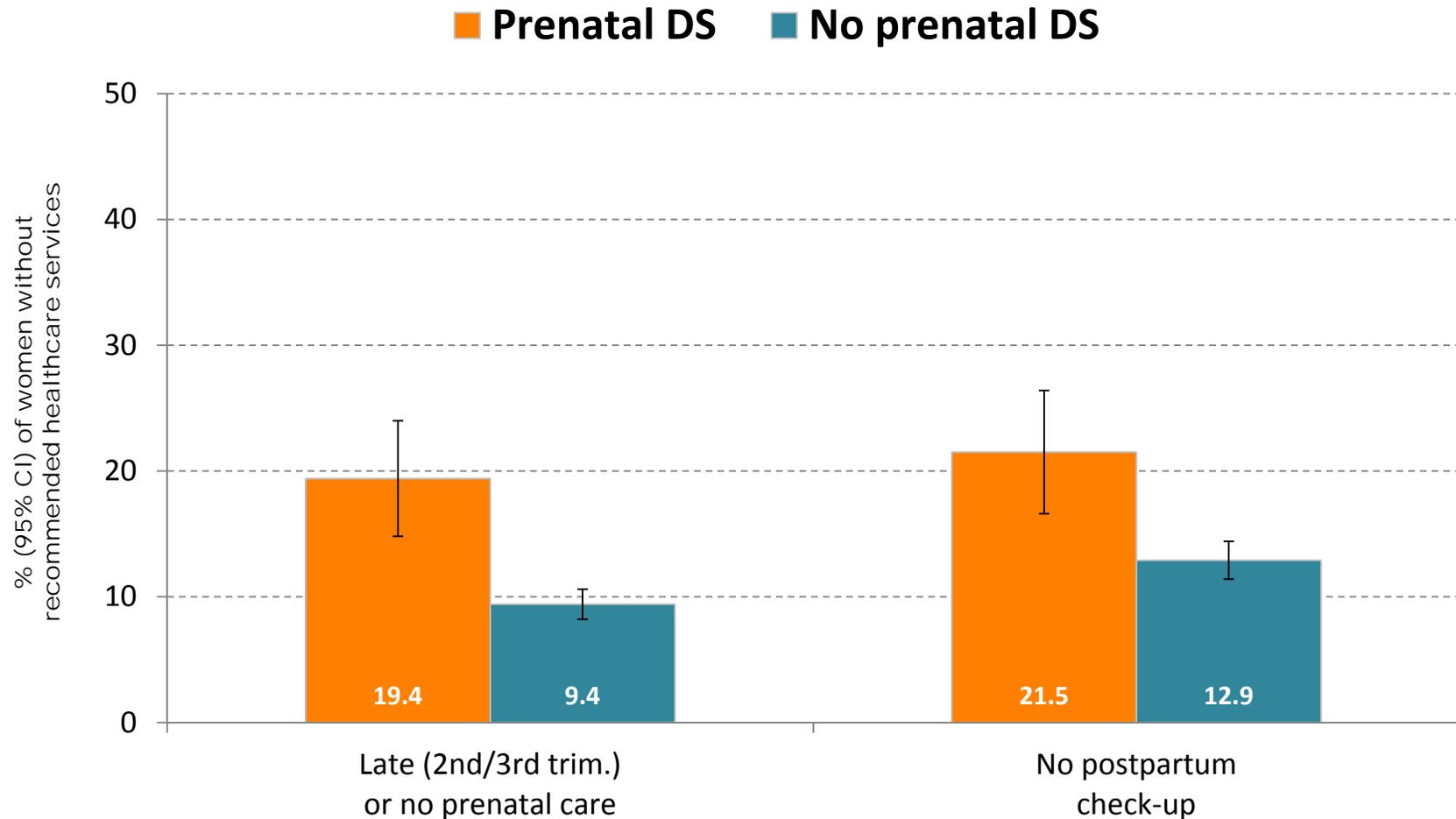
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Breastfeeding among Women with & without Prenatal Depressive Symptoms



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Did Not Receive Recommended Health Care Services among Women with & without Prenatal Depressive Symptoms



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Characteristics of Women with Prenatal Depressive Symptoms

MIHA 2010

Points of Contact with the Health Care and Social Services System

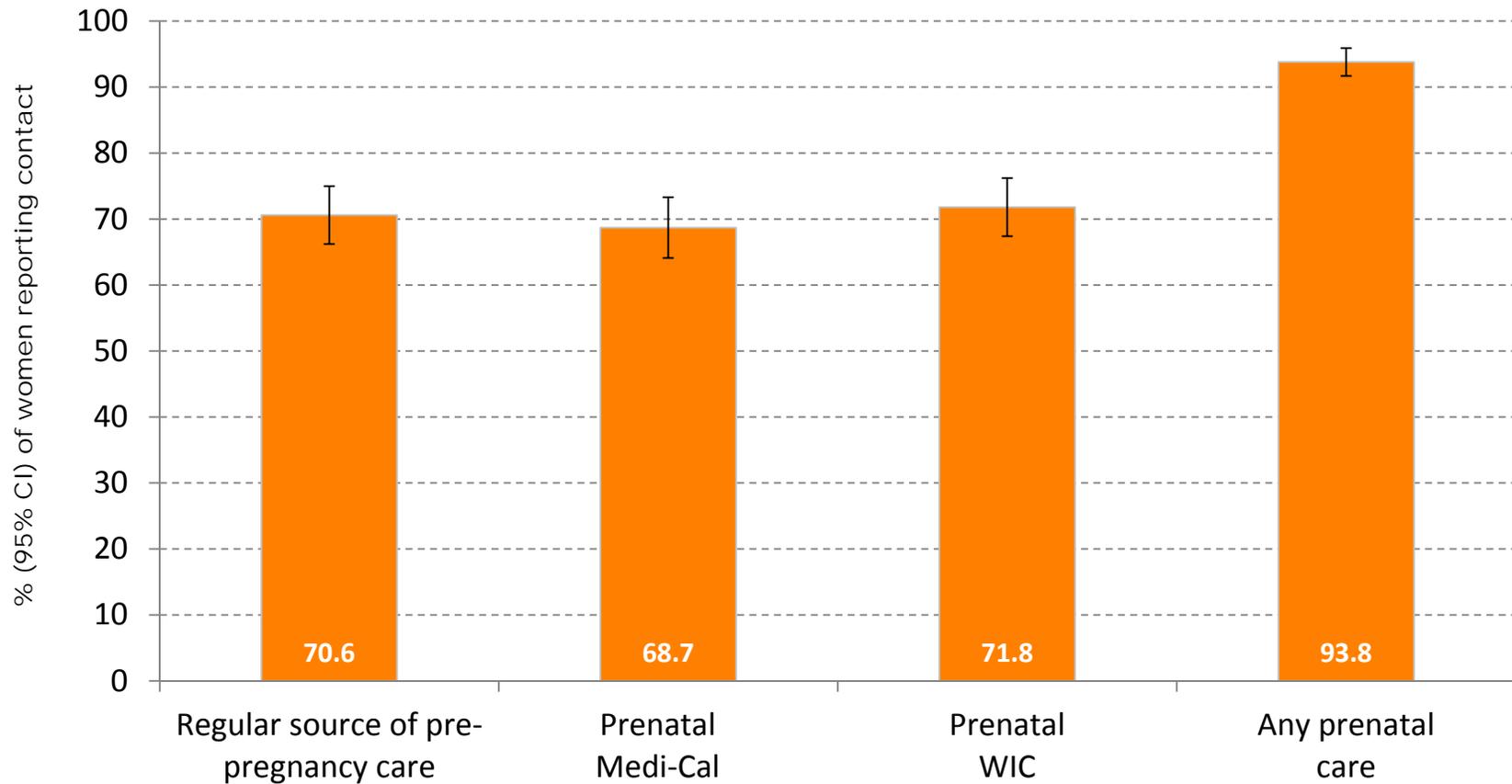
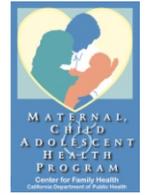
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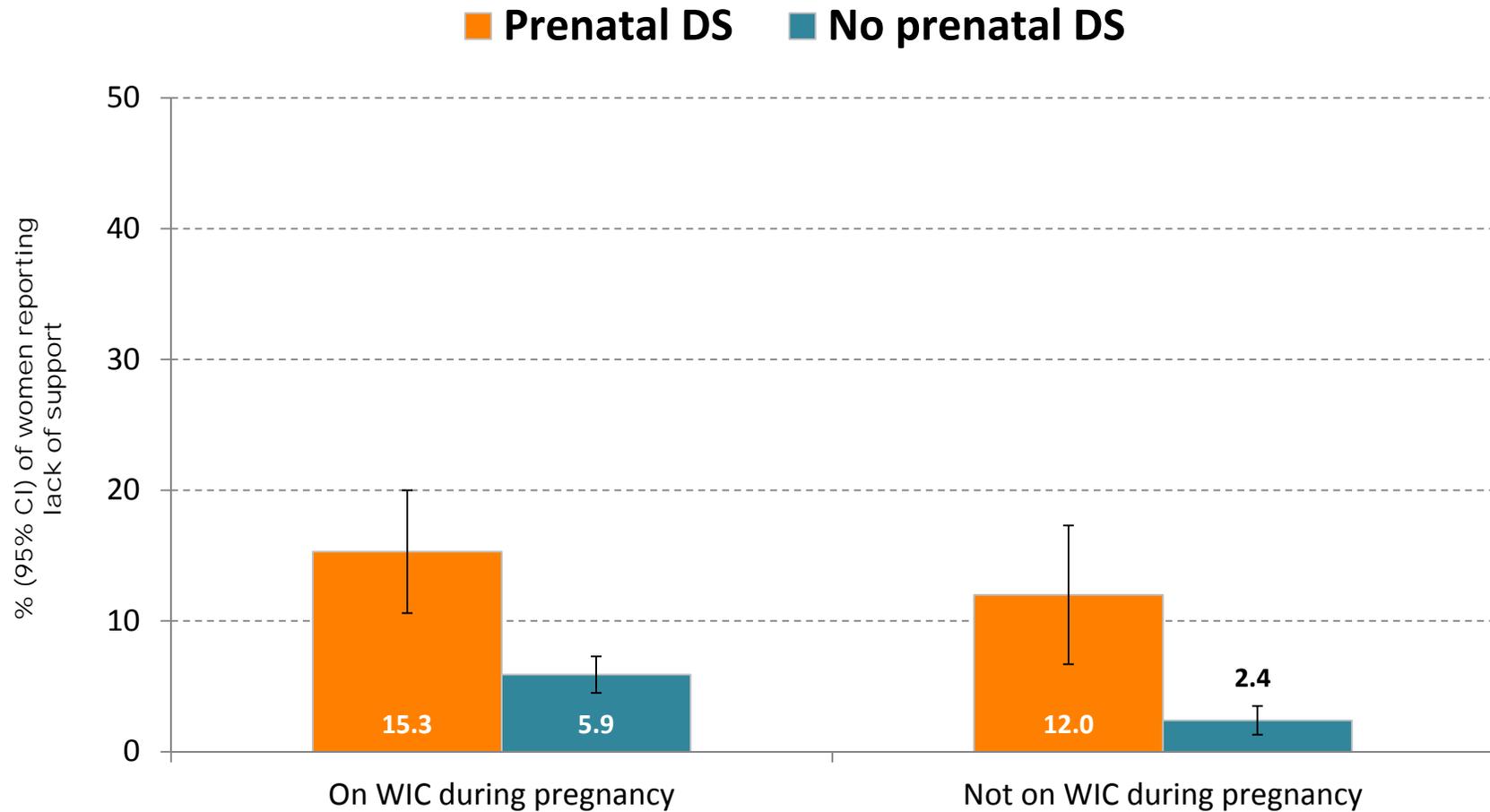
Where can we intervene?

Percent of Women with Prenatal Depressive Symptoms Who Have Contact with Health Care or Social Services System



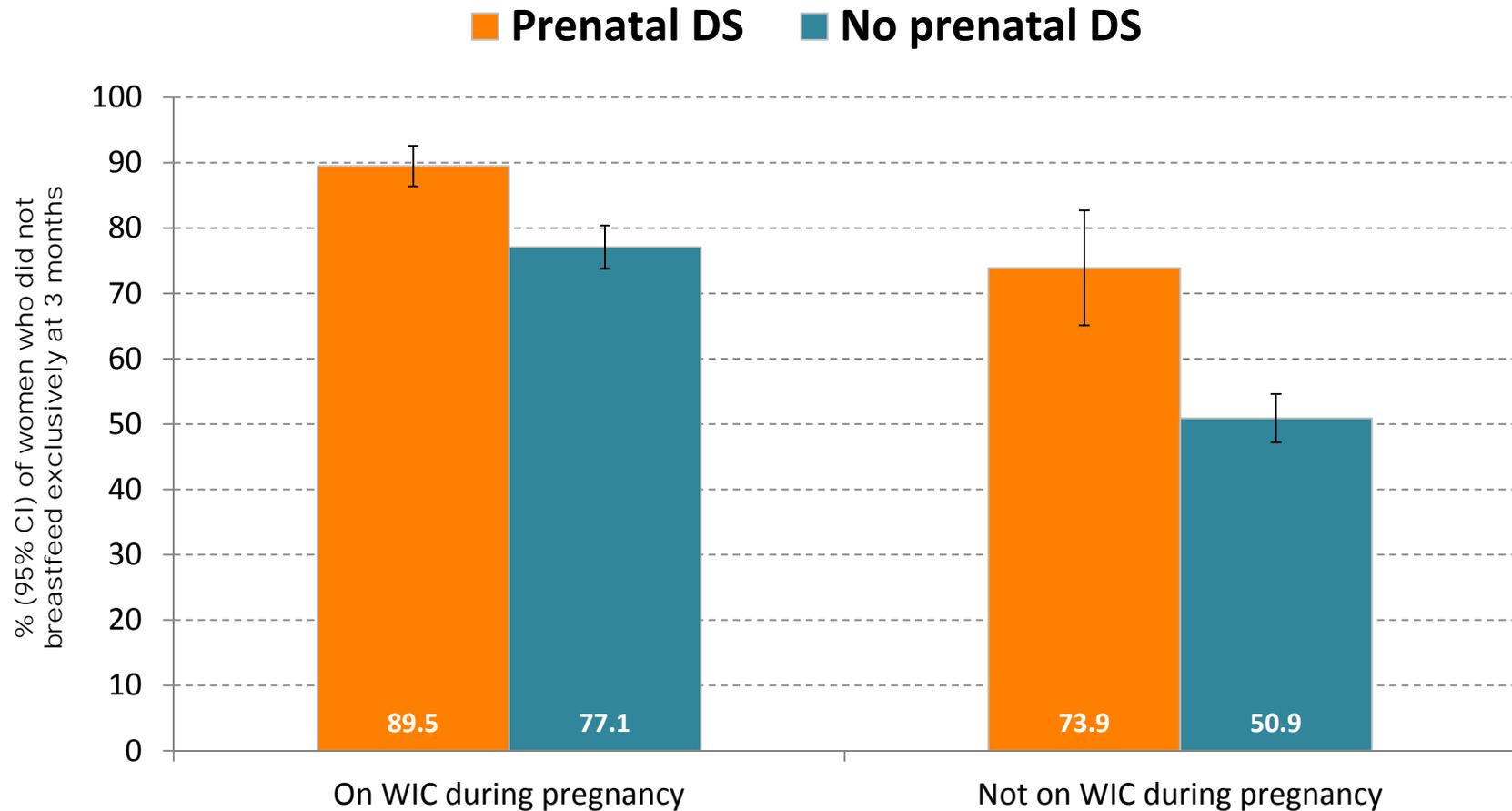
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Lack of Practical or Emotional Support during Pregnancy by Prenatal Depressive Symptoms and WIC Status



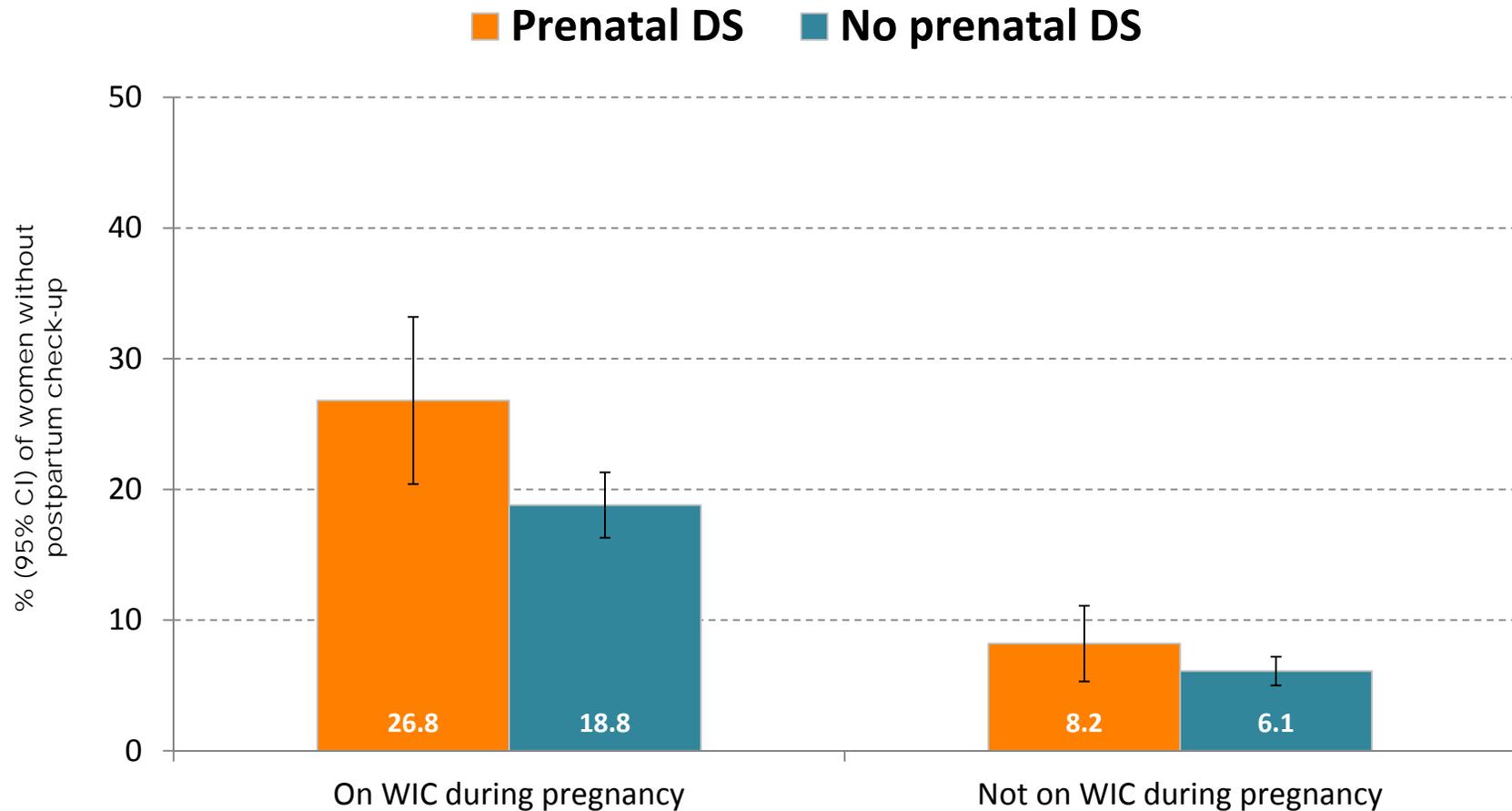
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Did Not Breastfeed Exclusively at 3 Months by Prenatal Depressive Symptoms and WIC Status



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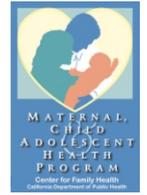
No Postpartum Check-Up by Prenatal Depressive Symptoms and WIC Status



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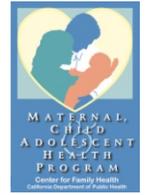
Summary



- **1 in 5 women experience either prenatal or postpartum depressive symptoms**
- **Higher prevalence of depressive symptoms is found in Hispanic and Black women and in women with less education and lower income**
- **Social factors that may negatively impact the health of mom and baby are similar for women with prenatal and postpartum depressive symptoms, including**
 - more financial hardships and other stressors
 - more intimate partner violence
 - less support



Summary (cont'd)



- **Perinatal depressive symptoms can have a debilitating impact on the ability of women to do their daily activities and can also affect the health of mom and baby through**
 - increased substance use
 - not receiving recommended health care services
 - less breastfeeding
- **The majority of women with prenatal and postpartum depressive symptoms have contact with the health care and social services system**
 - provides an opportunity for diagnosis, support, and referrals
 - for example, WIC serves a large number of pregnant women with depressive symptoms who have less support and fewer healthy behaviors than WIC participants without depressive symptoms

Would you like to see more MIHA results?

MIHA dissemination

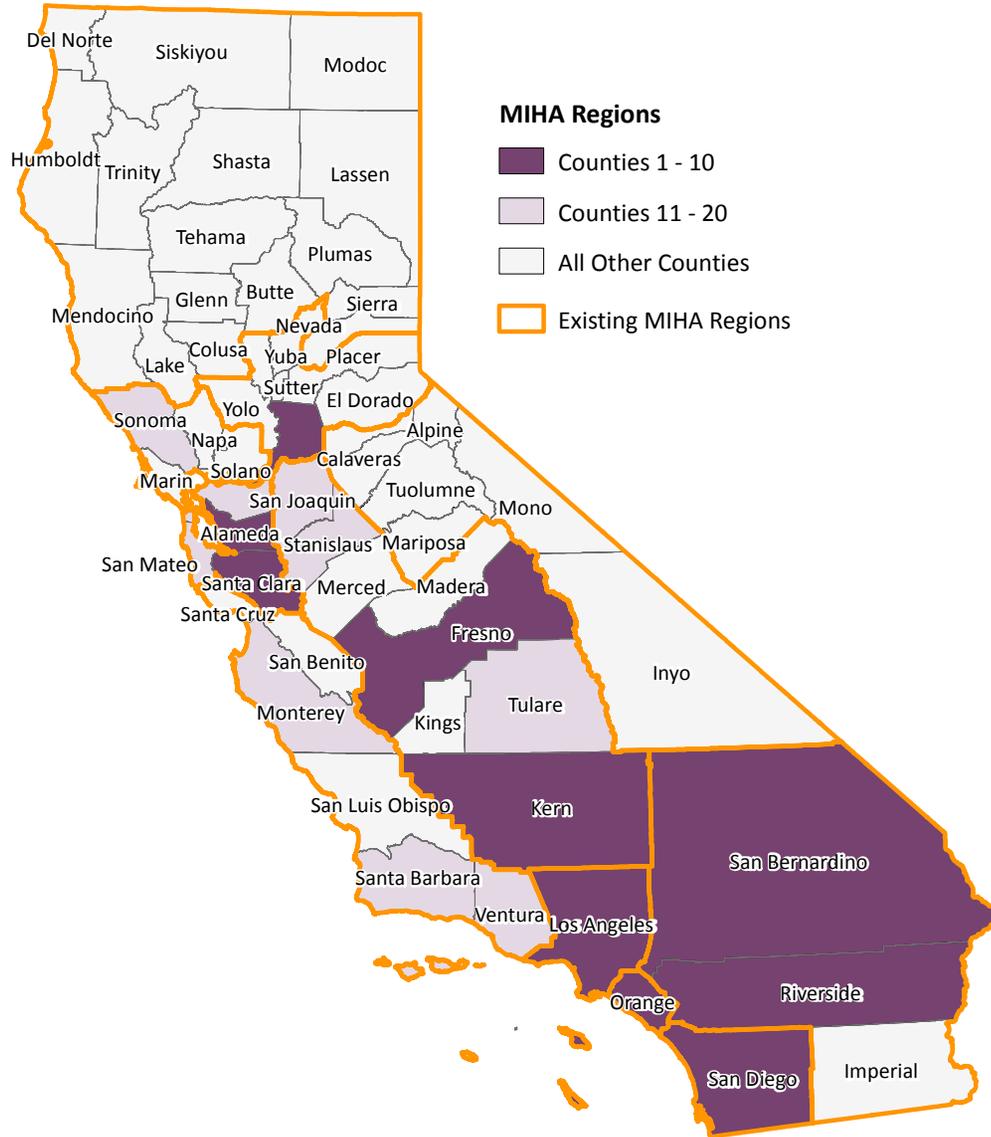
California Department of
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MIHA Regions, Before 2010



Expanded Sample MIHA 2010-2012



Top 20 Birthing Counties

% of resident women with a live birth in 2011

- Los Angeles26.0%
- San Diego 8.7%
- Orange 7.6%
- Riverside 6.1%
- San Bernardino..... 6.1%
- Santa Clara 4.7%
- Sacramento 4.0%
- Alameda 3.8%
- Fresno 3.2%
- Kern 2.9%
- Contra Costa 2.4%
- San Joaquin 2.1%
- Ventura 2.1%
- San Mateo 1.8%
- San Francisco 1.7%
- Tulare 1.6%
- Stanislaus 1.5%
- Monterey 1.4%
- Santa Barbara 1.2%
- Sonoma 1.0%

MIHA Regions, starting in 2013

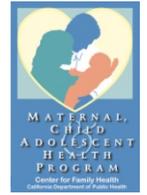


Top Delivery Counties

- 35 counties with largest number of births
- 98% of California births



2010 & 2011 MIHA Publications

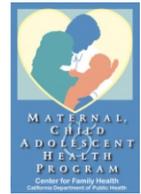


- **MIHA County and Regional Statistics**
 - Snapshots
 - Comparison Maps
 - Charts
- **Statewide Statistics**
 - By race, maternal age, income
 - By education, prenatal insurance **(NEW)**
 - Charts by race, maternal age, income **(NEW)**

2011 MIHA publications available spring 2013!



Snapshots available for Top 20 Counties and MIHA Regions



MIHA Snapshot, Sacramento County 2010

Maternal and Infant Health Assessment (MIHA) Survey



✓ better than rest of California * worse than rest of California * no statistical difference

	Sacramento County			California		
	%	95% CI	Population Estimate	%	95% CI	Population Estimate
Prior Poor Birth Outcomes						
Prior low birth weight or preterm delivery	* 10.3	6.6 - 13.9	2,000	9.6	8.4 - 10.9	48,100
Prior delivery by c-section	* 15.2	10.9 - 19.4	3,000	16.6	14.9 - 18.3	83,200
Health Status						
In excellent/good health before pregnancy	* 91.5	88.3 - 94.6	18,000	89.0	87.7 - 90.4	445,300
Chronic conditions before or during pregnancy						
Diabetes or gestational diabetes	* 13.0	9.0 - 17.0	2,600	12.1	10.7 - 13.4	60,200
Hypertension, preeclampsia or eclampsia	* 13.6	9.5 - 17.8	2,600	10.0	8.8 - 11.3	49,100
Asthma	* 11.1	7.3 - 14.8	2,100	7.1	6.2 - 8.0	35,300
Nutrition and Weight						
Daily folic acid use, month before pregnancy	* 30.8	25.5 - 36.0	6,100	33.1	31.2 - 35.0	165,500
Overweight before pregnancy	* 26.4	21.2 - 31.7	5,000	25.1	23.2 - 27.0	116,400
Obese before pregnancy	* 23.5	18.5 - 28.5	4,400	20.0	18.3 - 21.8	92,800
Inadequate weight gain during pregnancy	* 15.6	10.7 - 20.5	2,400	17.9	16.0 - 19.7	68,000
Excessive weight gain during pregnancy	* 44.0	37.4 - 50.5	6,800	43.5	41.2 - 45.9	165,800
Food insecurity during pregnancy	* 15.0	11.0 - 19.0	2,900	18.8	17.2 - 20.4	93,900
Intimate Partner Violence (IPV) and Depression						
Physical IPV in the year before pregnancy	* 2.2	0.7 - 3.8	400	2.8	2.1 - 3.5	14,200
Physical or psychological IPV during pregnancy	* 4.5	2.2 - 6.9	900	7.3	6.3 - 8.4	36,400
Prenatal depression	* 17.9	13.4 - 22.4	3,500	15.0	13.5 - 16.4	74,700
Postpartum depression	* 12.5	8.6 - 16.4	2,500	13.4	11.9 - 14.8	66,900
Hardships and Support during Pregnancy						
Had "a lot" of unpaid bills	* 20.1	15.6 - 24.7	3,900	21.5	19.8 - 23.1	106,800
Moved	* 31.5	26.2 - 36.8	6,200	28.8	27.0 - 30.7	143,700
Woman or partner lost job	✓ 14.3	10.2 - 18.4	2,800	19.7	18.1 - 21.4	97,700
Became separated or divorced	* 8.3	5.1 - 11.4	1,600	8.1	6.9 - 9.2	40,200
Had no practical or emotional support	* 4.0	1.7 - 6.2	800	5.8	4.8 - 6.7	28,800
Substance Use						
Any smoking, 3 months before pregnancy	* 13.8	10.0 - 17.6	2,700	12.5	11.2 - 13.7	62,000
Any smoking, 1st or 3rd trimester	* 7.6	4.8 - 10.4	1,500	5.6	4.9 - 6.4	28,100
Any binge drinking, 3 months before pregnancy	* 13.8	9.8 - 17.8	2,700	15.0	13.5 - 16.5	74,200
Any alcohol use, 1st or 3rd trimester	* 10.7	7.0 - 14.3	2,100	12.1	10.8 - 13.4	60,400
Postpartum Discussions with Provider						
Discussed birth spacing	* 44.0	37.5 - 50.5	6,900	39.4	37.1 - 41.7	158,400
Discussed postpartum birth control	* 88.8	85.1 - 92.5	17,200	87.6	86.0 - 89.1	432,900
Infant Sleep and Breastfeeding						
Placed infant on back to sleep	* 78.1	73.2 - 83.0	15,100	74.4	72.5 - 76.4	360,100
Intended to breastfeed, before birth	* 89.1	85.4 - 92.7	17,300	91.3	90.2 - 92.5	449,300
Intended to breastfeed exclusively, before birth	* 62.4	57.0 - 67.7	12,200	60.6	58.6 - 62.6	298,200
Breastfeeding practices						
Any breastfeeding, 1 month after delivery	* 76.2	71.4 - 81.1	14,800	77.7	76.0 - 79.4	380,600
Exclusive breastfeeding, 1 month after delivery	* 47.8	42.0 - 53.6	9,300	46.4	44.4 - 48.4	227,200
Any breastfeeding, 3 months after delivery	* 55.6	49.1 - 62.2	7,300	59.5	57.0 - 61.9	211,000
Exclusive breastfeeding, 3 months after delivery	* 28.2	22.0 - 34.4	3,700	31.6	29.4 - 33.8	112,100
Health Care Utilization and Coverage						

Geographic Areas:
County or region with California comparison

Statistical Information:
Percent (%)
Confidence Interval (95% CI)
Population Estimate (N)

Symbols indicate statistically better or worse than rest of state

MIHA Regional Comparison 2010

Maternal and Infant Health Assessment (MIHA) Survey



Prenatal depression

MIHA Region	Percent	95% CI	Population Estimate of Indicator
California	15.0	13.5 - 16.4	74,700
Central Coast Region	† 15.7	12.8 - 18.7	4,700
Greater Sacramento Region	† 14.1	10.9 - 17.4	4,200
Los Angeles County	† 14.8	10.1 - 19.5	19,400
North/Mountain Region	† 16.1	10.9 - 21.4	2,100
Orange County	† 14.9	10.5 - 19.4	5,600
San Diego County	✓ 9.2	5.7 - 12.6	4,000
San Francisco Bay Area	✓ 12.0	10.2 - 13.7	10,300
San Joaquin Valley	✖ 18.4	16.2 - 20.7	12,000
Southeastern California	✖ 19.6	16.3 - 22.9	12,500

- ✓ Statistically better than the rest of California ($p < .05$, chi-squared test)
- ✖ Statistically worse than the rest of California ($p < .05$, chi-squared test)
- † No statistical difference between region and the rest of California

Technical notes: The Maternal and Infant Health Assessment (MIHA) is an annual population-based survey of California resident women with a live birth in 2010, with a sample size of 6,817. Percent (%), 95% confidence intervals [95% CI], and estimated number of women in the population with the health indicator/characteristic (i.e., numerator of the percent rounded to the nearest hundred) are weighted to represent all women with a live birth in California and the region in 2010. Indicator definitions are on the MIHA website.

MIHA Regions

Central Coast
Greater Sacramento
North/Mountain

Counties in Each Region

Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz, Ventura
El Dorado, Placer, Sacramento, Sutter, Yolo, Yuba
Alpine, Amador, Butte, Calaveras, Colusa, Del Norte, Glenn, Humboldt, Inyo, Lake, Lassen, Mariposa, Mendocino, Modoc, Mono, Nevada, Plumas, Shasta, Sierra, Siskiyou, Tehama, Trinity, Tuolumne
Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma
Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, Tulare
Imperial, Riverside, San Bernardino

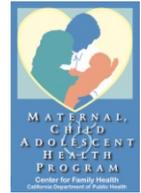
Data Source: Maternal and Infant Health Assessment Survey
Prepared by: Maternal, Child and Adolescent Health Program,
Center for Family Health, California Department of Public Health

MIHA is a joint effort of the Maternal, Child and Adolescent Health and WIC Programs of the Center for Family Health, California Department of Public Health and the Center on Social Disparities in Health at the University of California, San Francisco. Visit the MIHA website at www.cdph.ca.gov/MIHA.

Additional indicators and maps for the 9 MIHA regions can be found on the MIHA website.



2010-2012 MIHA County and Regional Stratified Snapshots



- **Sub-groups within counties or MIHA regions (NEW, coming in 2014)**
 - Race/ethnicity, income, prenatal health insurance
 - Possible additional groups, e.g., maternal age
 - Presentation similar to MIHA Statewide Snapshots
 - Pooled years 2010-2012

 (Your county / region here)

MIHA Snapshot, ~~California~~ by Race/Ethnicity, 2010 - 2012

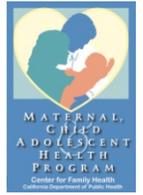
Maternal and Infant Health Assessment (MIHA) Survey



	Total			Hispanic			Black			White			Asian/Pacific Islander		
	%	95% CI	N	%	95% CI	N	%	95% CI	N	%	95% CI	N	%	95% CI	N
Total	100		501,100	50.6	48.9 - 52.2	249,000	6.0	5.8 - 6.2	29,500	29.3	27.8 - 30.8	144,200	13.7	12.2 - 15.2	67,600
Prior Poor Birth Outcomes															
Prior low birth weight or preterm delivery	9.6	8.4 - 10.9	48,100	9.7	7.7 - 11.6	24,000	12.8	7.1 - 18.5	3,800	7.7	6.0 - 9.4	11,100	11.5	7.5 - 15.5	7,700
Prior delivery by c-section	16.6	14.9 - 18.3	83,200	17.7	15.1 - 20.2	44,000	20.0	13.1 - 26.9	5,900	15.2	12.6 - 17.8	21,900	15.2	10.4 - 20.0	10,300
Health Status															
In excellent/good health before pregnancy	89.0	87.7 - 90.4	445,300	84.4	82.1 - 86.8	209,500	88.4	82.5 - 94.4	26,100	95.1	93.8 - 96.5	137,100	93.2	90.9 - 95.5	63,000
Chronic conditions before or during pregnancy															
Diabetes or gestational diabetes	12.1	10.7 - 13.4	60,200	12.8	10.9 - 14.7	31,700	8.7	4.0 - 13.4	2,500	6.6	5.1 - 8.1	9,500	22.4	16.7 - 28.2	15,100
Hypertension, preeclampsia or eclampsia	10.0	8.8 - 11.3	49,100	9.8	7.8 - 11.7	23,500	15.5	10.4 - 20.5	4,500	9.3	7.8 - 10.9	13,300	10.4	6.3 - 14.5	6,900
Asthma	7.1	6.2 - 8.0	35,300	5.5	4.3 - 6.8	13,600	15.4	10.0 - 20.9	4,500	9.0	7.3 - 10.6	12,900	4.9	2.5 - 7.3	3,300
Nutrition and Weight															
Daily folic acid use, month before pregnancy	33.1	31.2 - 35.0	165,500	28.5	25.7 - 31.4	70,900	22.1	16.4 - 27.8	6,500	40.7	37.4 - 44.0	58,700	37.5	31.5 - 43.4	25,300
Overweight before pregnancy	25.1	23.2 - 27.0	116,400	31.0	27.9 - 34.2	66,900	27.1	19.7 - 34.6	7,800	19.5	16.9 - 22.2	27,800	16.4	11.6 - 21.2	10,900
Obese before pregnancy	20.0	18.3 - 21.8	92,800	23.5	20.6 - 26.3	50,600	29.7	22.2 - 37.2	8,600	19.4	16.4 - 22.3	27,500	6.7	4.2 - 9.1	4,400
Inadequate weight gain during pregnancy	17.9	16.0 - 19.7	68,000	20.8	17.8 - 23.9	36,700	14.7	10.4 - 19.0	3,100	12.7	10.2 - 15.2	15,100	21.8	16.2 - 27.4	12,300
Excessive weight gain during pregnancy	43.5	41.2 - 45.9	165,800	40.9	37.3 - 44.6	72,100	54.0	45.0 - 63.0	11,300	50.3	46.6 - 53.9	59,700	32.8	26.5 - 39.2	18,500
Food insecurity during pregnancy	18.8	17.2 - 20.4	93,900	25.0	22.3 - 27.7	62,000	23.1	16.1 - 30.1	6,800	9.1	7.5 - 10.6	13,100	14.7	9.9 - 19.5	9,900
Intimate Partner Violence (IPV) and Depression															



Questions?



**More information about MIHA and our publications
is available on the website:**

www.cdph.ca.gov/MIHA

**To be added to the MIHA distribution list or
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