

Beyond Adequacy of Prenatal Care: Completeness of Prenatal Care Discussions and Opportunities for Intervention. Findings from Michigan PRAMS, 2012-2015

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BACKGROUND

Prenatal care (PNC) indices based on density of visits are useful, but may not capture the depth of care provided. We describe completeness of PNC by looking at the number of topics that providers discussed with Michigan mothers, with attention to missed opportunities for intervention.

STUDY QUESTIONS

STUDY QUESTION 1:

- 1.1: What proportion of Michigan mothers discuss all twelve PNC topics with their PNC providers?
- 1.2: What proportion discuss less than half the possible topics?

STUDY QUESTION 2:

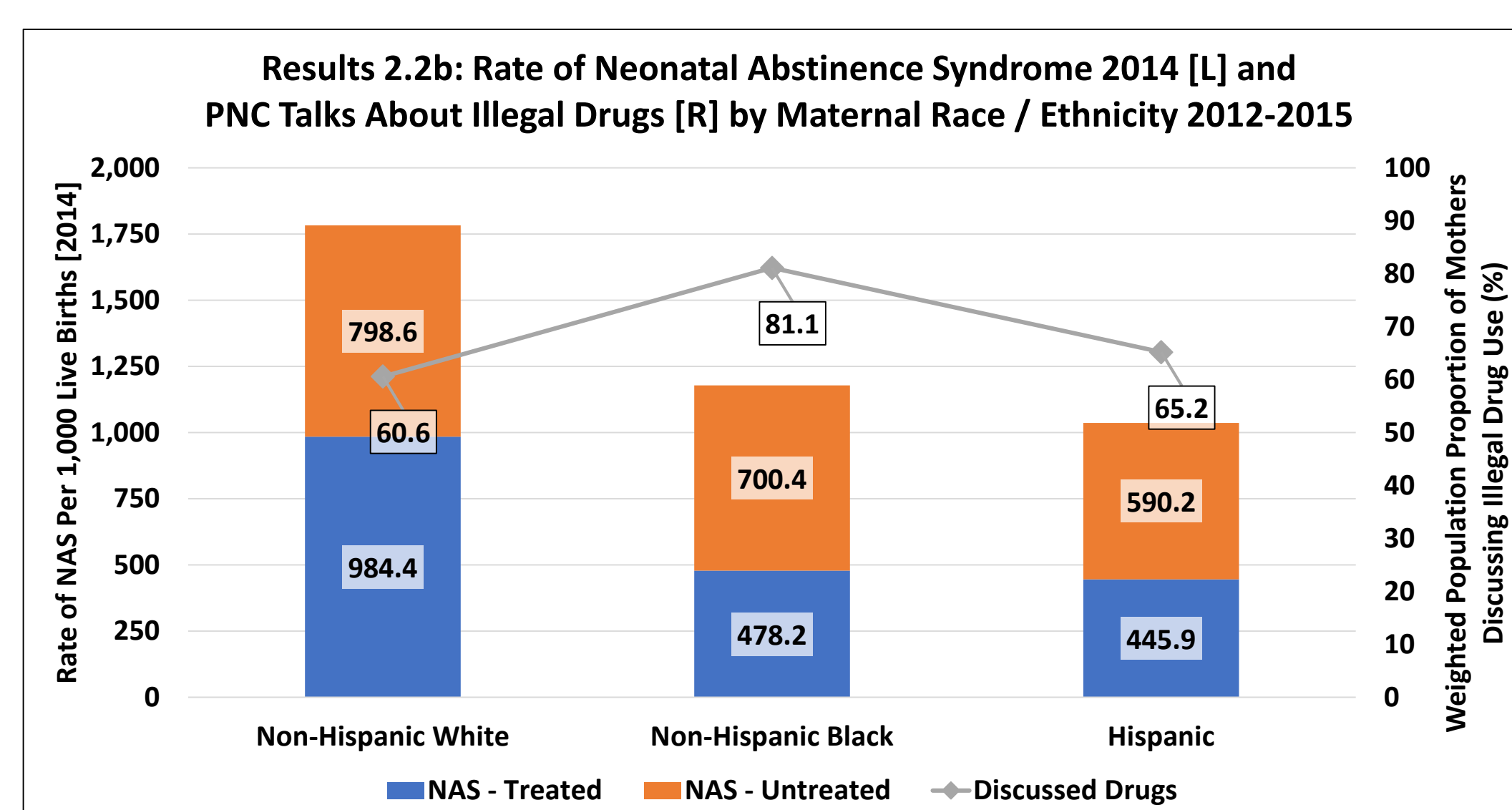
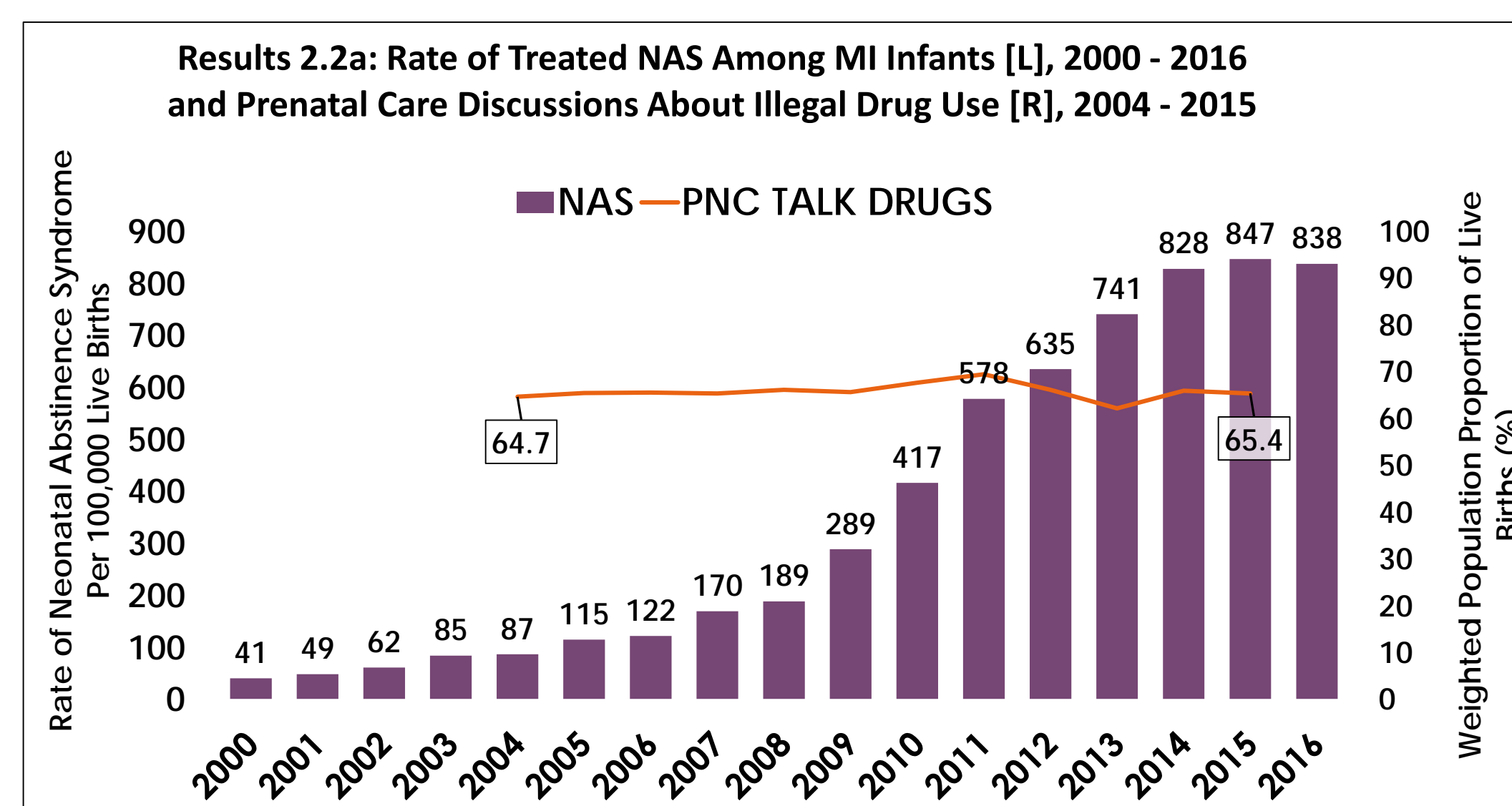
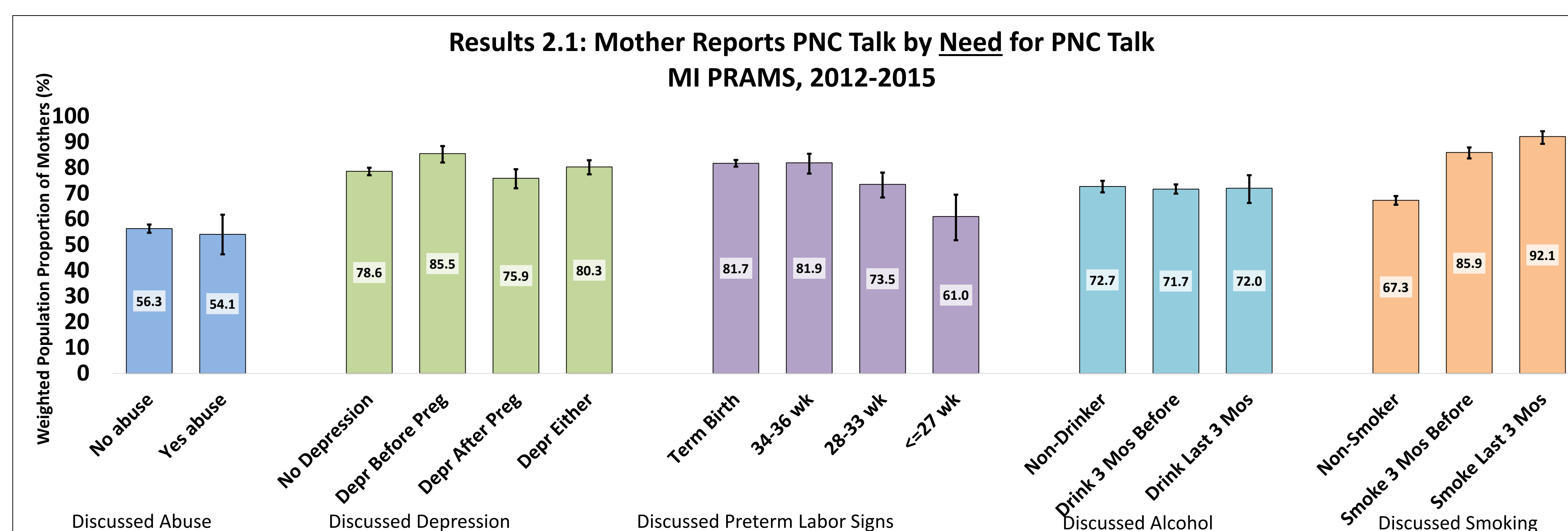
- 2.1: How often do mothers report that their care providers discussed topics for which they had a specific need?
- 2.2: Are the mothers at greatest risk for having an infant born with neonatal abstinence syndrome (NAS) reporting PNC discussions about illegal drug use?

STUDY QUESTION 3:

- 3.1: Are women who receive care from private clinics more or less likely to report no discussions about substance use during PNC?
- 3.2: Does multivariate adjustment for potential confounders impact this relationship?
- 3.3: Does adjustment for adequacy of prenatal care impact this association?

METHODS : ANALYSIS

- MI PRAMS data from birth years 2012-2015 were analyzed using SAS-callable SUDAAN
- Question on PNC conversations were compared against answers for partner abuse, depression, preterm birth, alcohol and tobacco use
- PNC conversations about illegal drug use compared against rates and demographics for NAS
 - NAS rates obtained by linking MI Inpatient Database (hospital record of births) to MI Resident Live Birth File (denominator)
 - NAS case definition: ICD-9 code 779.5 | ICD-10 code P96.1
 - Treatment for neonatal drug withdrawal syndrome
- Proportion of mothers reporting no PNC conversations about alcohol, tobacco, or illegal drug use estimated for women receiving PNC from private doctors' offices
- Risk of completing PNC without talking about any substance use modeled using PROC RLOGIST. Multivariate adjusted risk ratios (aRR) estimated with PREDMARG statement



	Weighted %	95% CI	Wald Chi2
TOTAL	22.7	(21.4-24.0)	
Doc for PNC	26.6	(25.0-28.3)	p < 0.05
All Other PNC	14.2	(12.4-16.2)	
<20	5.9	(3.4-10.0)	p < 0.05
20-29	17.1	(15.6-18.8)	
30+	33.1	(30.8-35.4)	
<HS	12.5	(9.4-16.5)	p < 0.05
HS-GED	12.7	(10.7-15.0)	
Some College	22.5	(20.3-24.8)	
College +	35.1	(32.6-37.8)	
Non-Hispanic White	25.6	(24.0-27.4)	p < 0.05
Non-Hispanic Black	11.2	(10.0-12.4)	
Hispanic	24.8	(19.0-31.7)	
Non-Hispanic Other	20.3	(15.6-25.8)	
Married	31.3	(29.5-33.3)	p < 0.05
Unmarried	10.9	(9.5-12.5)	
No Previous Live Birth	16.5	(14.8-18.4)	p < 0.05
Yes Previous Live Birth	27.0	(25.3-28.9)	
Kotelchuck - Inadequate	17.3	(13.8-21.5)	p < 0.05
Kotelchuck - Intermediate	21.6	(17.8-25.9)	
Kotelchuck - Adequate	24.3	(22.3-26.4)	
Kotelchuck - Adequate Plus	22.4	(20.3-24.6)	
PNC Start During 1ST TRI	23.3	(21.9-24.8)	p = 0.057
PNC Start After 1ST TRI	19.8	(16.7-23.4)	

24. During any of your prenatal care visits, did a doctor, nurse, or other health care worker talk with you about any of the things listed below? Please count only discussions, not reading materials or videos. For each item, check No if no one talked with you about it or Yes if someone did.

	No	Yes
a. How much weight I should gain during my pregnancy	<input type="checkbox"/>	<input type="checkbox"/>
b. How smoking during pregnancy could affect my baby	<input type="checkbox"/>	<input type="checkbox"/>
c. Breastfeeding my baby	<input type="checkbox"/>	<input type="checkbox"/>
d. How drinking alcohol during pregnancy could affect my baby	<input type="checkbox"/>	<input type="checkbox"/>
e. Using a seat belt during my pregnancy	<input type="checkbox"/>	<input type="checkbox"/>
f. Medicines that are safe to take during my pregnancy	<input type="checkbox"/>	<input type="checkbox"/>
g. How using illegal drugs could affect my baby	<input type="checkbox"/>	<input type="checkbox"/>
h. Doing tests to screen for birth defects or diseases that run in my family	<input type="checkbox"/>	<input type="checkbox"/>
i. The signs and symptoms of preterm labor (labor more than 3 weeks before the baby is due)	<input type="checkbox"/>	<input type="checkbox"/>
j. Getting tested for HIV (the virus that causes AIDS)	<input type="checkbox"/>	<input type="checkbox"/>
k. What to do if I feel depressed during my pregnancy or after my baby is born	<input type="checkbox"/>	<input type="checkbox"/>
l. Physical abuse to women by their husbands or partners	<input type="checkbox"/>	<input type="checkbox"/>

RESULTS

STUDY QUESTION 1:

- 1.1: 29.6% (95% CI: 28.2%-31.0%) of Michigan mothers discussed all twelve PNC topics with their providers
- 1.2: Nearly a quarter (22.4%; 95% CI: 21.1%-23.7%) discussed less than six topics over the course of PNC.

STUDY QUESTION 2:

- 2.1: Mothers reporting abuse, alcohol use, or depression are **no more likely** to discuss these topics during PNC than unaffected mothers. Mothers who smoked during pregnancy were **more likely** to discuss smoking. Women who delivered preterm were **less likely** to have discussed the signs and symptoms of preterm labor during PNC.
- 2.2: Frequency of PNC conversations about illegal drug use remains constant while incidence of NAS rapidly increases. Mothers at greater risk for having a baby with NAS [NHW] are relatively **less likely** to talk about illegal drugs during PNC.

STUDY QUESTION 3:

- 3.1: Women receiving PNC at a private doctor are **more likely** to complete PNC without having discussed any substance use compared to women receiving PNC from all other provider types [hospital, health department, or community clinics]
 - (RR = 1.87, 95% CI: 1.62-2.17).
- 3.2: After adjusting for factors associated with both source of PNC and substance use conversations (age, education, race / ethnicity, marital status, parity), the increased risk remains statistically significant
 - (aRR = 1.27, 95% CI: 1.10-1.47)
- 3.3: Adjustment for Kotelchuck index and number of PNC visits has no impact on risk of completing PNC with no substance talks.

DISCUSSION | CONCLUSIONS

- 1: A significant proportion of Michigan mothers (~22%) complete PNC having had few discussions about factors that can impact pregnancy health.
- 2: There are missed opportunities for intervention when women with specific needs (referrals for abuse or depression, counseling for alcohol use) complete PNC without discussing these topics.
- 3: Mothers receiving PNC primarily from private doctor offices are more likely to complete PNC with no discussions about substance use. This is independent of adequacy of care measures.

CONCLUSION: To better connect women with services and interventions needed during pregnancy, prenatal care providers should strive for more complete discussions with all Michigan mothers.

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