From Safe Sleep to Gestational Diabetes:

A Study of Asian, non-Hispanic Mothers in New Jersey

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Asians: A growing population with emerging issues in maternal and child health

- Asian, non-Hispanic (NH), Americans are a rapidly growing population in the United States (US).

- 5% of the US population in 2014.

- 9% of the New Jersey population in 2014.

- Gestational Diabetes

  - 11% of Asian, NH, mothers in 2013

- Hepatitis B

  - >50% of chronic Hepatitis B cases are in Asians in 2014

- Low birth weight

  - 8.6% of Asian, NH, babies

Asians in New Jersey vs. United States

Racial/Ethnic distribution in New Jersey compared to the United States				
	United States		New Jersey	
	%	N	%	N
Asian, NH	4.7	14,465,124	8.2	719,827

Source: US Census Bureau, 2010 Census

Maternal Racial/Ethnic distribution in New Jersey, 2003 and 2013				
	2003		2013	
	%	N	%	N
Asian, NH	8.6	10,061	11.0	11,307

Source: New Jersey Birth Certificate Database, 2003 and 2013

Methods

- Examination of safe sleep practices by selected maternal characteristics
  - Race/ethnicity
  - Income
  - Education
- Safe sleep practices recommended by AAP
  - Putting infants to sleep on their back
  - Avoid bed-sharing
  - Putting infant to sleep in his/her own crib
  - Putting infant to sleep on a firm mattress

Safe Sleep Practices by Race/Ethnicity

	White, NH (%)	Black, NH (%)	Hispanic (%)	Asian, NH (%)
Baby sleeps on back	76.8	54.9	59.1	81.8
Baby shares a bed with an adult	48.1	83.0	60.4	**81.5**
Baby sleeps in own crib	93.4	77.8	89.5	**79.0**
Baby sleeps on firm mattress	85.5	72.2	82.9	**73.7**

Examining the Relationship Between Safe Sleep Practices and Race/Ethnicity

- Odds ratios (ORs) utilized
  - Represents the odds that an outcome (safe sleep) will be reported by mothers who are not in the reference group, compared to the odds that the outcome will be reported by mothers in the reference group.
    - For these analyses, White, NH, mothers are the reference group
  - OR=1 Race/ethnicity does not affect odds of outcome
  - OR>1 Race/ethnicity associated with higher odds of outcome
  - OR<1 Race/ethnicity associated with lower odds of outcome
- Crude vs. Adjusted OR
- Adjusted for income and education

Infant Sharing a Bed with an Adult

	Crude OR	Adjusted OR†
White, NH	1.0 (Reference)	1.0 (Reference)
Black, NH	5.3*	3.9*
Hispanic	1.6*	1.1
Asian, NH	4.8*	**5.2***

Statistically significant
†Adjusted for income and education

Infant Not Sleeping in His/Her Own Crib

	Crude OR	Adjusted OR†
White, NH	1.0 (Reference)	1.0 (Reference)
Black, NH	4.0*	3.5*
Hispanic	1.7	1.4
Asian, NH	3.7*	**4.2***

Statistically significant
†Adjusted for income and education

Infant Does Not Sleep on Firm Mattress

	Crude OR	Adjusted OR†
White, NH	1.0 (Reference)	1.0 (Reference)
Black, NH	2.3*	1.5
Hispanic	1.2	0.8
Asian, NH	2.1*	**2.3***

*Statistically significant
†Adjusted for income and education

Summary

- We found unexpected variations across safe sleep practices among Asian, NH, mothers.

- Odds among Asian, NH, mothers higher for
  - Bed-sharing
  - Infant not sleeping in his/her own crib
  - Infant not sleeping on a firm mattress

- Who is the Asian, NH, mother that has a higher likelihood of these practices?

Expanded Analysis

- Demographic profile
  - Age
  - Education
  - Annual Household Income
- Obesity
  - Standard
  - Asian-specific
- Gestational diabetes

Demographic Profile

Characteristics		Asian, NH, Mothers Who Practice Safe Sleep	Asian, NH, Mothers Who DO NOT Practice Safe Sleep
Age	18-29	21.1	32.7
	30+	**78.9**	**67.3**
Education	High School or Less	2.4	7.8
	College or More	**97.6**	**92.2**
Annual Household Income	≤$67,000	29.6	34.3
	>$67,000	**70.4**	**65.7**

Prevalence of Gestational Diabetes

All Mothers			
	Obesity (Standard)	Obesity (Asian-Specific)	Gestational Diabetes
White, NH	16.5	16.5	7.1
Black, NH	32.4	32.4	9.3
Hispanic	25.9	25.9	15.6
Asian, NH	7.0	**32.2**	**14.2**

	Mothers Who Practice Safe Sleep		Mothers Who Do Not Practice Safe Sleep	
	Obesity	Gestational Diabetes	Obesity	Gestational Diabetes
White, NH	16.5	8.2	16.5	6.3
Black, NH	24.7	11.2	34.4	9.5
Hispanic	32.0	19.4	21.4	13.7
Asian, NH	10.1* **28.8****	3.9	6.5* **33.1****	**15.9**

Standard Obesity: BMI>30 kg/m²   **Asian-specific Obesity: BMI>25 kg/m²*

Association Between Race/Ethnicity, Obesity and Gestational Diabetes

	Mothers Who Practiced Safe Sleep		Mothers Who Did Not Practice Safe Sleep	
	Crude OR	Adjusted OR†	Crude OR	Adjusted OR†
Obesity (Asian-Specific)				
White, NH	1.0	1.0	1.0	1.0
Black, NH	1.7	1.5	2.6*	2.9*
Hispanic	2.4*	1.9	1.4	1.5*
Asian, NH	0.6	0.6	0.4*	0.5
Gestational Diabetes				
White, NH	1.0	1.0	1.0	1.0
Black, NH	1.4	0.9	1.6	2.3
Hispanic	2.7*	3.1*	2.4*	3.2*
Asian, NH	0.5	0.7	2.8*	**3.6***

Statistically significant
†Adjusted for income and education

Sleep Practices and Nativity Status

		ALL Asian, NH (n=153)	US-born Asian, NH (n=23)	Foreign-born Asian, NH (n=130)
Age	**18-29**	30.9	21.0	32.5
	30+	69.1	79.0	67.5
Education	**High School or Less**	6.7	14.4	5.5
	College or More	93.3	85.6	94.5
Annual Household Income	**≤$67,000**	33.7	45.9	31.7
	≥$67,000	66.3	54.1	68.3

	ALL Asian, NH	US-born Asian, NH	Foreign-born Asian, NH
Infant sleeps on back	81.8	**89.5**	80.5
Infant shares bed with adult	81.5	75.3	**82.5**
Infant not in own crib	21.0	6.9	**23.2**
Infant not on firm mattress	26.3	23.8	**26.7**

Conclusions

- More than just sociodemographics
- Cultural competence is essential
- Clinical practice that recognizes special needs of the Asian, NH, population
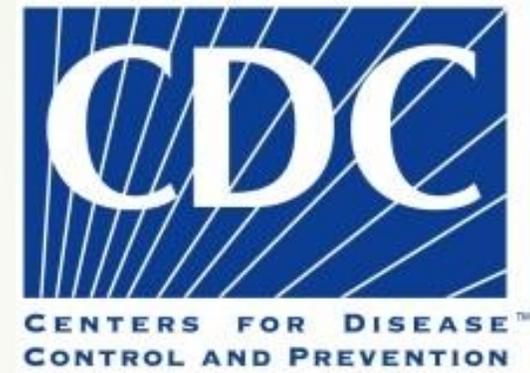
Strengths and Limitations

- Strengths
  - Using a sample that is representative of NJ to look at some health concerns that affect Asian, NH, mothers
  - Examination of safe sleep practices with a focus on Asian, NH, mothers
  - Differences between mothers who practice safe sleep and those who do not in terms of Obesity and Gestational Diabetes
- Limitations
  - Lack of availability of more recent data
  - Small sample number of US-born Asian, NH, mothers
  - Inability to determine duration of stay in the US for immigrant mothers

Acknowledgement

Questions?