

# **Acculturation and HPV Infection Among US Latinas**

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# Outline



- Background: US Latinos, Cervical Cancer, and Acculturation
- Methods: NHANES Secondary Data Analysis
- Results: Differences by HPV type
- Conclusions: Future Directions & Limitations



Background

# US Latinos



- US population is now one-third minority.
- Latinos represent the largest minority group at 42.7 million (14%) in 2005. Of Latinos, about 64% are Mexican.
- US Latinos are individuals who were either born in a Latin American country or have ancestors who migrated from Latin America.

# Latino Demographics

- Latinos are younger (mean age 27 vs. 36.2; 50% under age 18 vs. 25%).
- Latinos experience high levels of poverty (22%).
- 1 out of 3 Latinos are without health insurance.
- 40% of Latinos are foreign born.
- Spanish-speakers up by 62% from 2000 to 2010, 17.3 to 28.1 million; ½ speak English very well.

# Cervical Cancer & Latinas



- Latinas have almost a two-fold higher incidence of cervical cancer compared to white women.
- Latinas have a 1.5 times greater likelihood of dying from cervical cancer than white women.
- High-Risk HPV: primary cause.

# Study Aim



*Primary Objective:* To investigate the relationship between acculturation and HPV infection for US Latinas.

*Hypothesis:*

- ↑ Acculturation →
- ↑ Sexual Risk Behaviors →
- ↑ HPV Infection

# Acculturation



Process by which immigrants adopt the attitudes, values, customs, beliefs and behaviors of a new culture.



## Acculturation and Morbidity and Mortality

Over time in the US (years and by generational status), there is an increase in rates of:  
obesity, diabetes, and CVD,  
a decrease in healthy birth outcomes,  
and an increase in overall cancer rate for Latinos



### Hypothesized causes for change:

- change in social networks and social support
  - change in health behaviors
- change in stress/mental health
  - change in values

# Why investigate acculturation?

*“Knowing acculturation levels allows researchers to identify groups within a culture that may experience differential risks for diseases or have distinct behavioral patterns. Because acculturation is linked to cultural beliefs and attitudes, understanding level of acculturation can help design health promotion programs and materials”*  
(Coronado 2005).

# Acculturation & Sexual Risk Behavior

With increased acculturation:

- greater likelihood of engaging in higher risk sex by teens and adults.
- higher levels of substance use occurs.
- changes in social behavior and mental health occur.



# Methods

# Methods



- Factors Analysis (Acculturation)
- Logistic Regression (HPV 0/1)
- Sensitivity Analyses (High Risk vs. any HPV; Mexican vs. all Latinos)

# Data Source: NHANES (03-04)

- NHANES uses a complex, multistage, probability sampling design.
- Both face-to-face interviews and medical examinations.
- Measures HPV infection.
- Separate section of acculturation related questions.
- Large sample of Latinos.



# Results and Conclusions

# Descriptive Statistics

- 529 Latinas in medical exam (503 with adequate results).
- 126 of 503 Latinas were HPV positive, mean age 28.6 (age range 14 – 60, SD 12.7).
- 442 Mexican Americans and 61 other Hispanics.



# HPV infection by age (n=503)

<u>AGE</u>	<u>Any HPV infection</u>		<u>High risk HPV infection</u>	
	n	%	n	%
Under 18	23	18	14	11
18-25	50	36	23	17
26-35	19	22	7	8
36-45	20	24	7	8
46-60	14	22	3	5
<b>Total</b>	<b>126</b>	<b>25</b>	<b>54</b>	<b>11</b>

Adjusted logistic regression analyses of acculturation measures and HPV infection risk for US Latinas (n=496)

	<u>Any HPV infection</u>		<u>High risk HPV infection</u>	
	<b>OR</b>	<b>95% CI</b>	<b>OR</b>	<b>95% CI</b>
<b>5-Item Language scale</b>	1.07	.87 - 1.31	<b>1.33</b>	<b>1.02 - 1.72</b>
<b>2-Level Language scale</b>	0.96	.83 - 1.11	1.18	.99 - 1.40
<b>Born in US</b>	1.47	.76 - 2.84	<b>3.29</b>	<b>1.26 - 8.62</b>
<b>Parents born in US</b>	1.23	.87 - 1.74	<b>1.84</b>	<b>1.19 - 2.85</b>

Covariates: age & income

Adjusted logistic regression analyses of acculturation measures and HPV infection risk for US Mexican Americans (n=409)

	<u>Any HPV infection</u>		<u>High risk HPV infection</u>	
	<b>OR</b>	<b>95% CI</b>	<b>OR</b>	<b>95% CI</b>
<b>5-Item Language scale</b>	1.15	.92 - 1.43	<b>1.58</b>	<b>1.16 - 2.17</b>
<b>2-Level Language scale</b>	1.06	.90 - 1.25	<b>1.31</b>	<b>1.08 - 1.60</b>
<b>Born in US</b>	1.51	.84 - 2.71	<b>2.75</b>	<b>1.28 - 5.94</b>
<b>Parents born in US</b>	<b>1.52</b>	<b>1.09 - 2.11</b>	<b>2.02</b>	<b>1.41 - 2.89</b>

Covariates: age & income

# Key Findings

- Level of acculturation did not relate to any HPV infection for Latinas.
- Level of acculturation did relate to high risk HPV infection.
- Results differed for Mexican Americans vs. all US Latinas.

# Future Research

- Why does acculturation relate to any HPV and High-Risk HPV infection rates differently?
- Why do the findings differ for Mexican Americans alone?

# The HPV Vaccine



- In 2006, the FDA approved a new vaccine for females that protects against:
  - High-risk HPV (HPV-16 and HPV-18) that cause approximately 70% of cervical cancer cases.
  - Low-risk HPV (HPV-6 and HPV-11) that cause 90% of genital warts.
- The CDC recommends the vaccine for girls at ages 11 – 12 years old but it can be given at 9 – 26.

# Tailored Vaccine Promotion Programs

- Level of acculturation may be a risk factor for HPV infection
- Key strategy: Community Based Participatory Research
- Qualitative methods needed to develop and tailor interventions

# Limitations

- Self-collected vaginal swab
- Low response to measurements of self-reported sexual behaviors
- Acculturation measure: US duration



# Committee

- Beti Thompson, PhD – Chair
- Gloria Coronado, PhD
- Hector Rodriguez, PhD, MPH
- Rebecca Kang, PhD, RN

# Support

- NCI's Biobehavioral Cancer Prevention and Control Training Grant
  - PI: Donald Patrick, PhD
- AHRQ T32 Training Grant
  - PI: Diane Martin, PhD
- UW Maternal & Child Public Health Leadership Training Program
  - Lead Faculty: Colleen Huebner, PhD, MPH



Questions? & Thank you



**Acculturation:**  
Language  
Ethnic Identification  
Country of Birth  
Parents' Country of Birth

**Sexual Risk Behaviors**

**HPV Infection**

**Other Covariates:**  
Income & Age

*CONCEPTUAL MODEL*



# Measurement of Acculturation

Previous acculturation scales for Mexican Americans:

- Language ability and preferred language (9 scales)
- Ethnicity of one's peers (5 scales)
- Preferences for Mexican food, music, and television (5 scales)
- Place of birth, place of growing up and generation level (3 scales)

# Field Interviews

- All participants complete an interviewer-administered questionnaire using Computer-Assisted Personal Interview (CAPI) technology.
- A large staff of trained interviewers, including bilingual interviewers, conduct these interviews in participants' homes.

# Acculturation

- Country of birth, number of years in the US, ethnic identity, country father born, country mother born
- Language (speak at home, read & speak, as a child, think, speak with friends)
  - Only Spanish
  - Spanish better than English
  - Both equally
  - English better than Spanish
  - Only English
  - Refused/Don't know



# Measurement

Past studies have shown language use, ethnic identity, and generation account for the largest proportion of variance in acculturation measures (Coronado 2005).

# MEC Examination

- All physical examinations are performed in a set of specially-designed and equipped Mobile Examination Centers (MEC), which travel to survey locations throughout the country. The survey team currently consists of a physician; medical and health technicians; and dietary and health interviewers.
- Audio computer assisted personal self interview (ACASI) and computer assisted personal interview (CAPI) questionnaires are administered in the MEC.