VALIDATING SELF-REPORTED HISTORY OF CHRONIC CONDITIONS AMONG ARECA (BETEL) NUT CHEWERS IN GUAM

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Pacific Global Health Conference
Honolulu, Hawaii
October 9, 2012
Guam Population: 159,358
147,798 Chamorros/Guamanians & Mixed in US
CNMI Population: 53,883

West Pacific Islands

U.S. Census, 2012; UT Austin Maps, 2012
ARECA (BETEL) NUT
600 million people worldwide chew betel nut.
Endemic populations embrace betel nut.

CULTURE

1. Betel offering to the spirits.
2. Tribal woman with red lips from chewing.

COMMERCE

3. Offerings during special occasions.
4. Vendor selling betel nut and leaves.
5. Betel beauty selling betel quid.

CONSUMPTION

7. Chamorro quid ingredients.

BETEL NUT AND CANCER

- There is *sufficient evidence in humans* for the carcinogenicity of betel quid with/without tobacco.
- There is *sufficient evidence in experimental animals* for the carcinogenicity of areca nut with/without tobacco.

IARC, 2004
Age Standardized Oral Cavity Incidence Rates per 100,000 World Population

Males, all ages

Age Standardized Oral Cavity Incidence Rates per 100,000 World Population

Females, all ages
## BETEL NUT USE AND OTHER CHRONIC CONDITIONS

<table>
<thead>
<tr>
<th>Disease/Condition</th>
<th># Studies</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asthma(^1-4)</td>
<td>4</td>
<td>2 aggravation of asthma</td>
</tr>
<tr>
<td>CVD(^5-10)</td>
<td>6</td>
<td>5 associations</td>
</tr>
<tr>
<td>Diabetes(^5, 11-13)</td>
<td>4</td>
<td>3 associations</td>
</tr>
<tr>
<td>Hypertension(^14-17)</td>
<td>4</td>
<td>2 associations</td>
</tr>
<tr>
<td>Metabolic syndrome(^18-20)</td>
<td>3</td>
<td>2 associations</td>
</tr>
<tr>
<td>Obesity(^21-24)</td>
<td>4</td>
<td>4 associations</td>
</tr>
</tbody>
</table>

PILOT PROJECT I

• Funding
  • NIH-NCI U54 University of Guam/Cancer Center of Hawaii Partnership Program

• Goal
  • To develop the protocols for studying oral precancerous lesions and other chronic diseases in betel nut chewers in Micronesia
RESEARCH TEAM

- CNMI, Guam, Hawaii, Missouri, London
PILOT PROJECT I (SUB-STUDY)

- Objective
  - To validate chronic conditions reported by betel nut chewers
RESEARCH DESIGN

• Participants
  • 137 betel nut chewers recruited in Guam

• Questionnaire
  • “Has a medical doctor ever told you that you have/had…”
    • Diabetes
    • Heart attack
    • Stroke
    • Hypertension
RESEARCH DESIGN

• Validation
  • Participants consented to validation
  • Consent/validation form and cover letter sent corresponding physician/clinic
## RESULTS

### CHARACTERISTICS OF 49 BETEL NUT CHEWERS WITH CHRONIC CONDITIONS

<table>
<thead>
<tr>
<th></th>
<th>Mean ± Standard Error</th>
<th>Number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGE</td>
<td>48.0 ± 1.8</td>
<td></td>
</tr>
<tr>
<td>CHEWING DURATION</td>
<td>24.2 ± 6.2</td>
<td></td>
</tr>
<tr>
<td>SEX</td>
<td>Male: 23 (46.9)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female: 26 (53.1)</td>
<td></td>
</tr>
<tr>
<td>MARITAL STATUS</td>
<td>Unmarried: 27 (55.1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Married: 14 (28.6)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Widowed: 8 (16.3)</td>
<td></td>
</tr>
<tr>
<td>EDUCATION</td>
<td>&lt; HS: 5 (10.2)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HS graduate: 41 (83.7)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>College graduate: 3 (6.1)</td>
<td></td>
</tr>
</tbody>
</table>
RESULTS

137 Betel Nut Chewers

49 - With Chronic Conditions
38 – Sent for Validation
11 – Returned and Validated

88 - No Chronic Conditions
11 – No Memory of Physician/Clinic

- All conditions (17 total) confirmed
- Two additional unreported conditions identified by physician/clinic
- Majority (72%) of validated forms from Community Health Center
IMPACT

• Findings suggest that self-reported data on chronic conditions collected in this population are valid, but may be underestimated

• Response from CHC shows great promise for cooperative and mutually beneficial relationship

• Additional work needed to improve communication with private health care providers
MAHALO, SI YU’OS MA’ASE, THANK YOU

All Study Participants
Research Team