LIVING THROUGH HEALTH & CULTURE WITH RESEARCH IN COSTA RICA

Knowledge about Adverse Effects of Sun Exposure in the Puntarenas Province of Costa Rica
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ACM Field Research in the Environment, Social Sciences, & Humanities
Spring Trimester 2014
Outline

Background
Research
Connection
Acknowledgements
Background
Health, Culture, and Languages
“Comparative Health Care in Costa Rica: The Socialized System, Traditional Medicine, and Alternative Medicine”
Costa Rica
Ticos & Skin Cancer

- Most Common
- Early Childhood Exposure
- Type of Skin Color
- Hispanic population
What is the knowledge of the population of Quebrada Ganado, Punta Leona, and Jacó in Costa Rica during May 2014 about the adverse effects of sun exposure?
Rural Life
Study Area

Jaco
Quebrada Ganado
Punta Leona
Parte IV. Practicas

1. ¿En qué momento del día usted se expone al sol durante la semana (lunes hasta viernes)?
   Manana   Mediodía  Tarde   Todo el Día   Nunca

2. ¿Por cuántas horas al día se expone al sol durante la semana (lunes hasta viernes)?
   Menos de una hora  2-4 horas  Más de 5 horas  6 AM – 6 PM

3. ¿En qué momento del día usted se expone al sol durante los fines de semana (sábado y domingo)?
   Manana   Dia    Tarde   Todo el Día   Nunca

4. ¿Por cuántas horas al día se expone al sol durante los fines de la semana (sábado y domingo)?
   Menos de una hora  2-4 horas  Más de 5 horas  6 AM – 6 PM

5. ¿Por qué se expone al sol?
   Trabajo   Salud   Recreación   Deporte   Estética

6. ¿Protecciones contra el sol?
   Sombrilla   Lentes   Ropa Apropiada   Sombrero   Ninguna

7. ¿Ha tenido el cáncer de piel? Sí   No

8. ¿Conoce a alguien de familia o amigos quien haya tenido cáncer de piel? Sí   No

9. ¿Ha consultado a un médico en el último año por alguna lesión en la piel sospechosa de...
   Quemaduras   Problemas en los ojos   Cataratas   Cáncer de la piel
Results and Discussion

315 interviews were conducted!
What are the adverse effects of sun exposure?

- **Skin Cancer**: 89%
- **Other**: 11%

Source: Interviews Conducted in Jaco, Quebrada Ganado, & Punta Leona, Costa Rica, May 2014
"Is sun exposure harmful?" according to Age Group.

Mosaic plot adjusting responses to a 100% scale. Puntarenas Province, Costa Rica, May 2014.

Source: Interviews Conducted in Jaco, Quebrada Ganado, & Punta Leona, Costa Rica, May 2014
"Is exposure harmful even on cloudy days?" according to Education Level. Mosaic plot adjusting responses to a 100% scale. Puntarenas Province, Costa Rica, May 2014.

$\chi^2=27, \text{df}=3, P<0.0001$

Source: Interviews Conducted in Jaco, Quebrada Ganado, & Punta Leona, Costa Rica, May 2014
"What are the adverse effects of sun exposure on a person?" according to Age Group.

Mosaic plot adjusting responses to a 100% scale. Puntarenas Province, Costa Rica, May 2014.

\[ \chi^2 = 55, \text{ df} = 24, P = 0.0003 \]

*Manchas: Skin lesions *Quemaduras: Burns

Source: Interviews Conducted in Jaco, Quebrada Ganado, & Punta Leona, Costa Rica, May 2014
**Knowledge Score**

- “What are possible causes of skin cancer?”

<table>
<thead>
<tr>
<th>Answer</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>UV Radiation</td>
</tr>
<tr>
<td>4</td>
<td>The Sun</td>
</tr>
<tr>
<td>3</td>
<td>Genetic</td>
</tr>
<tr>
<td>2</td>
<td>Skin Abnormalities</td>
</tr>
<tr>
<td>1</td>
<td>Other Responses</td>
</tr>
<tr>
<td>0</td>
<td>Nothing/Did not Know/ Wrong Answer</td>
</tr>
</tbody>
</table>

Final Score = Sum total / Number of responses given

0-5 scale
Knowledge Score vs. Education Level

Plot of Fitted Model

Score = 2.69462 + 0.275874*Skin Cancer Causes.Education

(F=7.60, df=1, 313, P=0.0062, R²=2.37%)

Source: Interviews Conducted in Jaco, Quebrada Ganado, & Punta Leona, Costa Rica, May 2014
Conclusion

- Need for awareness
- Foundation to Skin Cancer Related Sun Exposure Research
Why does this matter?
Health, Culture, and Languages
The bigger picture for me!
Acknowledgements
Questions?
Recommendations

- **Education Program**
  - Higher education = higher knowledge

- **Long Term**
  - Early Life Time Exposure

- **Short Term**
  - Cost Reduction
  - Environmental Programs
  - Scheduling
Interviewed Subjects’ Gender, Jaco, Quebrada Ganado, & Punta Leona, Costa Rica, May 2014

Source: Interviews Conducted in Jaco, Quebrada Ganado, & Punta Leona, Costa Rica, May 2014
Age Groups, Interviewed Subjects in Jaco, Quebrada Ganado, & Punta Leona, Costa Rica, May 2014

Source: Interviews Conducted in Jaco, Quebrada Ganado, & Punta Leona, Costa Rica, May 2014
Education Levels, Interviewed Subjects in Jaco, Quebrada Ganado, & Punta Leona, Costa Rica, May 2014

Source: Interviews Conducted in Jaco, Quebrada Ganado, & Punta Leona, Costa Rica, May 2014
Interviewed Subjects’ Skin Colors, Jaco, Quebrada Ganado, & Punta Leona, Costa Rica, May 2014

Source: Interviews Conducted in Jaco, Quebrada Ganado, & Punta Leona, Costa Rica, May 2014
Interviewed Subjects’ Places of Residence; Jaco, Quebrada Ganado, & Punta Leona, Costa Rica, May 2014

Source: Interviews Conducted in Jaco, Quebrada Ganado, & Punta Leona, Costa Rica, May 2014
Education vs Age

Plot of Fitted Model

Age, Education.Education = 2.39678 - 0.195488*Age, Education.Age

(F=38.84, df=1, 313, P<0.0001, R^2=11%)

Source: Interviews Conducted in Jaco, Quebrada Ganado, & Punta Leona, Costa Rica, May 2014
"What are the adverse effects of sun exposure on a person?" according to Gender.

Mosaic plot adjusting responses to a 100% scale. Puntarenas Province, Costa Rica, May 2014.

\[ \chi^2 = 15, \ \text{df} = 6, \ P = 0.0184 \]

*Manchas: Skin lesions  *Quemaduras: Burns

Source: Interviews Conducted in Jaco, Quebrada Ganado, & Punta Leona, Costa Rica, May 2014
Causes of Skin Cancer vs. Age

Plot of Fitted Model

Score = 3.44625 - 0.0915586*Skin Cancer Causes.Age

(F=2.38, df=1, 313, P=0.12, R²=0.75%)
Protection Methods Against Sun Exposure

<table>
<thead>
<tr>
<th>Protective Methods Responses</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunscreen</td>
<td>80%</td>
</tr>
<tr>
<td>Protective Clothing</td>
<td>18%</td>
</tr>
<tr>
<td>Caps/Wide-brimmed Hats</td>
<td>11%</td>
</tr>
<tr>
<td>Sunglasses</td>
<td>4%</td>
</tr>
<tr>
<td>Cream</td>
<td>6%</td>
</tr>
<tr>
<td>Limited to No Exposure</td>
<td>4%</td>
</tr>
<tr>
<td>Umbrella</td>
<td>7%</td>
</tr>
<tr>
<td>Other</td>
<td>4%</td>
</tr>
<tr>
<td>Nothing or Did Not Know</td>
<td>4%</td>
</tr>
<tr>
<td>Bronzer</td>
<td>3%</td>
</tr>
<tr>
<td>Shade</td>
<td>2%</td>
</tr>
</tbody>
</table>

Source: Interviews Conducted in Jaco, Quebrada Ganado, & Punta Leona, Costa Rica, May 2014