Differential Determinants of Oral Health Behavior in the Caribbean & Nepal

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Background:

- Oral disease consequence of inadequate oral hygiene behavior (OHB)
- Inadequate OHB very prevalent in all cultures
- Important to establish determinants
- Determinants depend on context and culture
- ‘One-size fits all’ approach will not be effective
- Identification and assessment important for developing oral health care interventions
Aim of the study:

-to identify predictors of OHB based on the **Theory of Planned Behavior** among dental care seekers in two culturally different regions:

the **Caribbean** (Aruba/Bonaire) and **Nepal**

2 potential additional determinants:

- **Expected Social Outcomes**: the perceived social consequences, i.e., how healthy teeth might affect a person’s interpersonal interactions

- **Oral Health Knowledge**: refers to the degree to which a person has sufficient or insufficient knowledge of oral health issues
Model of Theory of Planned Behavior, including Expected Social Outcomes and Oral Health Knowledge

- Attitude
- Social Norms
- Perceived Behavior Control
- Expected Social Outcomes
- Oral Health Knowledge
- Context/Country
- Oral Hygiene Behavior
Focal behavior: Oral Hygiene Behavior (OHB)

“brushing your teeth twice a day (once after breakfast and once before going to sleep), using a soft-bristled toothbrush and fluoride containing toothpaste; brushing softly/ without pressure for at least two minutes; brushing stepwise by making small strokes –sort of massage– near the gum, along the inside and the outside, and on the jackdaw areas.

In addition to the tooth brushing, daily interdental cleaning (i.e., use of floss, tooth sticks, or interdental brushes in the Caribbean, and use of *sinca* in Nepal) and tongue cleaning is also recommended.”
| **Caribbean**  
| (Aruba and Bonaire)  
| (PAHO, 2007) | **Nepal**  
| (WHO, 2009) |
| - small islands part of the Netherlands Antilles | - poor developing landlocked country situated in the Himalayas |
| - most people mixed ethnic descent (mainly Black, partially White, Amerindian and Asian) | - nearly 85% of the population lives in remote terrain |
| - about 75% Roman Catholic | - most Hindus |
| - relatively affluent | - under-nutrition wide-spread |
| - In 2005:  
on Bonaire around 9% unemployment  
on Aruba around 6% unemployment | - life expectation around 61 years |
<table>
<thead>
<tr>
<th></th>
<th>Caribbean</th>
<th>Nepal</th>
</tr>
</thead>
<tbody>
<tr>
<td>number of patients/ dental care seekers</td>
<td>113</td>
<td>108</td>
</tr>
<tr>
<td>female</td>
<td>55%</td>
<td>54%</td>
</tr>
<tr>
<td>average age (years, SD)</td>
<td>36.5 (13.2)</td>
<td>40.1 (16.5)</td>
</tr>
<tr>
<td>Mother tongue: Papiamento/ Nepali</td>
<td>73%</td>
<td>90%</td>
</tr>
<tr>
<td>Married</td>
<td>48%</td>
<td>74%</td>
</tr>
<tr>
<td>- high: college/university training</td>
<td>23%</td>
<td>----</td>
</tr>
<tr>
<td>- medium/ high: advanced vocational training</td>
<td>74%</td>
<td>13%</td>
</tr>
<tr>
<td>- low / medium: vocational training/ School Leaving Certificate</td>
<td>5%</td>
<td>32%</td>
</tr>
<tr>
<td>- low: primary school</td>
<td>----</td>
<td>27%</td>
</tr>
<tr>
<td>- none education</td>
<td>----</td>
<td>28%</td>
</tr>
<tr>
<td>- healthy teeth; no caries or gum disease</td>
<td>16%</td>
<td>23%</td>
</tr>
<tr>
<td>- slightly unhealthy dentition</td>
<td>54%</td>
<td>49%</td>
</tr>
<tr>
<td>- mutilated dentition</td>
<td>30%</td>
<td>28%</td>
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Study in the Caribbean
Study in Nepal
- **Attitude** (4 items, \(a = .65; \alpha = .83\)):

‘evaluation of the advised oral hygiene behavior, on dimensions unimportant-important, unpleasant-pleasant, unhealthy-healthy, and painful-painless’

- **Subjective norm** (4 items, \(a = .91; \alpha = .86\)):

‘My parents think that I should perform oral hygiene self-care as advised’

- **Perceived behavior control** (2 items, \(a = .60; \alpha = .40\)):

‘Do you succeed in taking care of your teeth based on the daily OHB’

- **Expected Social Outcomes** (6 items, \(a = .65; \alpha = .83\)):

‘In social contacts fresh breath is important’

- **Oral Health Knowledge** (7 items):

‘Gum bleeding is a sign of a periodontal disease’
RESULTS

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<th>Nepal</th>
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<tbody>
<tr>
<td>ATT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SN</td>
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<tr>
<td>PBC</td>
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<td>ESO</td>
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<tr>
<td>OHK</td>
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</table>

- ATT: ns
- SN: $p < .001$
- PBC: $p < .001$
- ESO: $p < .001$
- OHK: $p < .001$
RESULTS

Caribbean

Attitude

Social Norms

Perceived Behavior Control

Expected Social Outcomes

Oral Health Knowledge

Oral Hygiene Behavior

$R^2 = .177$

$F (5, 54) = 3.55, p < .001$

Note. * $p < .05$
RESULTS

Nepal

Attitude

Social Norms

Perceived Behavior Control

.28**

Expected Social Outcomes

- .23*

Oral Health Knowledge

Oral Hygiene Behavior

\[ R^2 = .066 \]
\[ F(5, 84) = 2.26, p < .05 \]

Note. ** p < .01 * p < .05
DISCUSSION

Potential explanations:

- In the **Caribbean** higher level of OHK: OHB is *modern* behavior;
  
  * OHB depends primarily on rational considerations, i.e., how positive one evaluates OHB and what important others think about OHB

- In **Nepal** lower level of OHK: tooth brushing is *traditional* behavior;
  
  * part of the bath ritual and has primarily a symbolic meaning in the sense of fostering purity

  * OHB as recommended by Western medicine is considered difficult behavior, and therefore determined by PBC

- In general, TPB may not be the best model to predict health behavior in developing countries
- In **Nepal**: higher ESO was associated with a *lower* OHB:

* suggests that ESO are not yet relevant in this population

**Conclusion**

- Interventions in developing countries must be different from those in developed countries,

**Caribbean**: attitude change, and social norm enhancement

**Nepal**: enhancing sense of control over OHB
Thank you for your attention!

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