Determinants of Oral Health Behavior in different cultures

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Oral Health Behavior (OHB)

Overview

- Research
- Applied Social Psychology & PATH model
- Step 1 and 2: Health behavior → Oral health behavior
- Step 4: Study 6 in Uruguay
- Study 1a Index of oral health behavior
- Study 1b Determinants of OHB
- Study 4b Nepal (study 4a Aruba & Bonaire)
- Other studies (study 3 and 5 the Netherlands)
- Study 2 Oral health-related quality of life in Dutch forensic psychiatric patients
- Conclusions
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Fundamental

University

Question

Result

Applied

Society

Question

Result

Research
TAKING PATIENTS' AND CLINICIANS' QUESTIONS
ABOUT THE EFFECTS OF TREATMENTS SERIOUSLY
A James Lind Alliance Meeting
held at the Royal Society of Medicine, London, 3 December 2005

This meeting was convened by the James Lind Alliance (JLA) to consider (i) mismatches between what researchers investigate and the unanswered questions about treatment uncertainties asked by patients and clinicians; (ii) mismatches between treatment outcomes studied by researchers and the outcomes regarded as important by patients; (iii) progress in the UK in identifying and prioritising unanswered patients' and clinicians' unanswered questions about the effects of treatments.

The objective of the meeting was to gain a clearer understanding of the benefits, difficulties and challenges in moving towards a research culture in which partnerships of patients and clinicians work together routinely to address treatment uncertainties and set priorities in research.

Presentation abstracts and slides, and a report of the morning session, are available below:
"Scientists have isolated the gene that makes scientists want to isolate genes."

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Applying Social Psychology and PATH method

From problems to solution

**Problem:** from the problem to a problem definition; identifying and defining the problem

**Analysis:** from a problem definition to analysis and explanation; formulating appropriate concepts and developing theory-based explanations

**Test:** from explanations to a procesmodel; developing and testing an explanatory process model

**Help:** from a process model to interventions; developing and evaluating a programme of interventions
Applied Social Psychology & Oral Health Behavior

Step 1 of the PATH method

Problem: from the problem to a problem definition; identifying and defining the problem

Even though oral hygiene behavior is a very common behavior, the prevalence of oral diseases suggests that this behavior is not always performed efficiently.
Oral Health Behavior (OHB)

**Health behavior → Oral health behavior**

Common in most allied (oral) health professions:

• Improve healthy lifestyle in order to prevent disease(s)

• Oral health is an essential aspect of general health throughout life

• Individuals have low awareness of their own oral hygiene, and of the consequences it may have for their mouth and well-being

• Dental professional support and oral self-care are important
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Step 2 of the PATH method

**Analysis:** from a problem definition to *analysis and explanation*; formulating appropriate concepts and developing theory-based explanations

![Diagram of the PATH model](image)

- **Disease**
- **Impairment**
- **Pain and Discomfort**
- **Disability**
- **Handicap**
- **Functional Limitation**

Fig. Model Locker (1988)

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*Health behavior* → *Oral health behavior*

- The theoretical model of oral health (Locker, 1988) suggests that oral disease can lead to impairments on several dimensions, such as physical, psychological and social


- Poor oral health and serious (untreated) oral diseases can have negative consequences on individual’s well-being (*Study 2*)

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www.hanze.nl/transparantezorgverlening
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Health behavior → Oral health behavior

• Healthy dentition is associated with:
  – A healthy personality
  – Positive perception by others
  – More attractive appearance
  – Overall experience of enjoyment

• Oral health may have an important, though often neglected, effect on a person’s appearance

Oral Health Behavior (OHB)

*Health behavior → Oral health behavior*

- Individual’s motivation is an interaction between:
  - Personal factors
  - The environment
  - Behavioral factors

- Oral self-care practices based on personal choices may be considered an important aspect of oral health behavior

- Individual beliefs and attitudes toward this behavior may play an important role in oral health care

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Oral Health Behavior (OHB)

**Health behavior → Oral health behavior**

Individual’s intrinsic motivation:

- No pain
- Good function and Communication
- Esthetics

We prefer to have strong, even white teeth and avoid false teeth

- Self-esteem
- Social pressure (family, peers)
- Status
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Step 3 of the PATH method

Test: from explanations to a process model; developing and testing an explanatory process model

- The theory of planned behavior (TPB) is the most used model to map the psychological causes of health behaviors

- TPB-model is used to predict the psychological determinants of oral health behavior
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Theory of Planned Behavior
(Ajzen, 1988, 1991)

Attitude: a person’s positive or negative feelings about a given behavior, for example,

‘I hate brushing my teeth twice a day, and cleaning interdentally at least once a day’

Subjective norm: the belief that specific important persons think that one should or should not perform a given behavior, for example,

‘My parents think that I should brush my teeth twice a day, and use interdental aids at least once a day’
Oral Health Behavior (OHB)

Theory of Planned Behavior
(Ajzen, 1988, 1991)

Perceived behavior control: a person’s perception of his/her capabilities to perform a behavior, for example,

‘I think I will be able to brush my teeth twice a day, and use interdental aids at least once a day’

The more positive the attitude towards oral self-care practices, the stronger the social norms, and the higher the perceived behavior control, the more likely it is that an individual will perform adequate oral health behavior
Oral Health Behavior (OHB)

Additional variables

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

‘In social contacts fresh breath is important’
‘It is embarrassing as a person has unhealthy teeth’

Oral Health Knowledge: refers to the degree to which a person has sufficient or insufficient knowledge of oral health issues, for example,

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

Culture (individualism vs. collectivism)

Attitude
Social norms
Expected social outcomes
Perceived behavioral control
Oral health knowledge

Oral Health Behavior
Oral Health Behavior (OHB)

Theory of Planned Behavior

- The predictive utility of the TPB has been supported in a wide range of behaviors

- Godin and Kok (1996), and also Armitage and Conner (2001) reported that the psychological factors identified by the TPB accounted for averages of 34% and 27%, respectively, of the variance in behaviors

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Step 4 of the PATH method

Help: from a process model to interventions; developing and evaluating a programme of interventions

Study 6

Example of an intervention in Dental Patients of ‘La facultad de Odontología de la Universidad Católica’ in Uruguay
Oral Health Behavior (OHB)

Study 4

‘persuasive health communications’ (message framing) for interventions

- Gain condition – promotion focus;
  emphasis on importance of having health teeth

- Loss condition – prevention focus
  emphasis on importance of preventing disease

promotie-preventie focus; Regulatory-focus - Higgins, 1997

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Study 1a Index of oral health behavior

The first aim of this study:

• To develop an index of desirable oral health behavior (OHB)

The questionnaire development was based on Delphi Method involving dental professionals at Centre of Dentistry and Oral Hygiene in Groningen

Questionnaire via Internet
Oral Health Behavior (OHB)

Index of oral health behavior
10 items

• Frequency of toothbrushing
  Twice a day or more than twice → 2
  Once a day → 1
  Not every day → 0

• Brushing moments
• Method of brushing
• Duration (minutes) of brushing
• Measure of force
• Fluoride toothpaste
• Interdental cleaning (use of floss/toothsticks/brushes)
• Tongue cleaning
Oral Health Behavior (OHB)

Study 1b Determinants of OHB

The second aim of this study:

- To examine the relevant predictors of OHB: variables of theory of planned behavior knowledge, expected social outcomes
Oral Health Behavior

Focal behavior in the model:

a daily regimen of at least brushing (using a soft toothbrush, brushing for at least two minutes twice a day; once after breakfast and once before going to sleep, brushing softly/ without power, brushing stepwise by making small strokes –sort of massage– near the gum), thorough interdental cleaning (i.e., use of floss, tooth sticks, or interdental brushes at least once a day), and using fluoride concentration toothpaste and tongue cleaning
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**Study 1b Methods**

- 487 participants (81.7% women - 18.3% men)
- average age of 28.4 (11.93) (min- max: 12-67 years)
- 96.7% Dutch nationality
- 64.5% unmarried
- 42.1% high school
- 31.4% polytechnic and university
- 26.4% lower level of education

Filled in a digital questionnaire via Internet
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**Predictors**

- **attitudes (ATT)** (9 items, \( \alpha = 0.83 \))
- **social norms (SN)** (5 items, \( \alpha = 0.92 \))
- **perceived behavioral control (PBC)** (3 items, \( \alpha = 0.71 \))
- **oral health knowledge** (16 items)
- **expected social outcomes (ESO)** of having healthy teeth (6 items, \( \alpha = 0.82 \))
### Oral Health Behavior (OHB)

#### Results

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<tr>
<td>ATT</td>
<td>.42**</td>
<td>.18**</td>
</tr>
<tr>
<td>SN</td>
<td>-.35**</td>
<td>-.16**</td>
</tr>
<tr>
<td>PBC</td>
<td>.46**</td>
<td>.30**</td>
</tr>
<tr>
<td>OH Knowledge</td>
<td>.22**</td>
<td>.17**</td>
</tr>
<tr>
<td>ESO</td>
<td>.24**</td>
<td>.08*</td>
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R² = .32. F (5,415) = 41.02, p < .001

*Regression analysis: TPB variables, knowledge and ESO predicted 32.3% of the variance in self-reported OHB*

*The relation between ESO and OHB was in part mediated by SN, ATT, and PBC*
Oral Health Behavior (OHB)

Other studies

Aruba and Bonaire:

Study 4a
Patients in general practice (N=62; N=52) Paper and pencil questionnaire + ‘dentition characteristics’

Nepal:

Study 4b
Population in Dental camp (N=69) Paper and pencil questionnaire, (N=39) semi-structured interview + ‘dentition characteristics’ Mean age 40.1 (16.5) Range 18-76
Oral Health Behavior (OHB)

Study in Nepal
Oral Health Behavior (OHB)

Study 2 Oral health-related quality of life in Dutch forensic psychiatric patients

Forensic Psychiatric Centre Dr. S. van Mesdag, Groningen
OHB & Oral health-related quality of life

Study 2

Dental anxiety $\beta = .35^*$ → Oral health-related quality of life
Unhealthy teeth $\beta = .29^*$ → Oral health behavior

$R^2 = 26.7$. $F(3,36) = 5.73$, $p<0.001$

Regression analysis: dental anxiety and unhealthy teeth predicted 26.7% of the variance in self-reported Oral Health-related Quality of Life

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Dental anxiety and ‘Dentition characteristics’
Oral Health Behavior (OHB)

Other studies

Netherlands:

Study 3a  First years students Psychology (N=339) Digital questionnaire during a mass testing session

Study 3b  Patients in UMCG - Centre for Dentistry and Oral Hygiene (N=112) Paper and pencil questionnaire + ‘dentition characteristics’

Study 5  Military JWF Kazerne (N=216) Paper and pencil questionnaire
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Conclusion

Study 1:
TPB variables, knowledge and ESO: 32.3% of the variance in self-reported OHB

Study 2:
Dental anxiety and unhealthy teeth: 26.7% of the variance in perceived oral health-related quality of life (OHQoL)

Correlation between self-reported OHB and OHQoL
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Conclusion

- The expanded TPB model may be a fruitful perspective to guide future research and practice in oral health behavior

- Results need replication in other samples to gauge the generalization of the findings………

- Indications social consequences of oral health play a role in oral health care

- Important clues for the prevention of oral health problems
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Thank you for your attention.

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