

# Oral Health and Communication Disorders: Promising Applications in the *ICF* Environmental Factors Domain

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12th Annual North American Collaborating Center Conference on ICF

**LIVING IN OUR ENVIRONMENT:  
The Promise of ICF**

**2006**  
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Vancouver, British Columbia (Canada)

# **An Existential Model of Oral Health**

**Michael MacEntee**

**Mario Augusto Brondani**



# My Talk!

- Views of “health”
- Sociodental Indicators (dental psychometrics)
- Modelling oral health
- New models

# What are we Modelling?

## **Health**

**biological absence of disease;**

## **Illness**

**psychological experience of disease;**

## **Sickness**

**social expression of illness**

Twaddle, 1979; Zola, 1989;

Bickenbach, *et al.*, 1999; Christopoulos, 2001

# Utilitarianism & Functionalism



**Greatest good for  
greatest number**



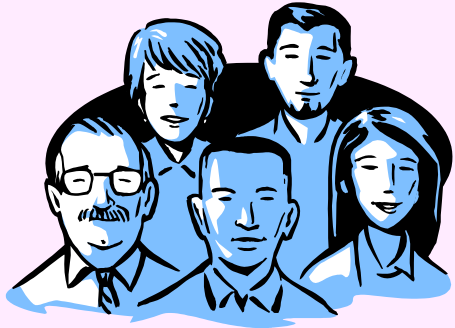
**Each person is a  
functioning unit of society**

**Predetermined needs  
conforming to customs  
of society**

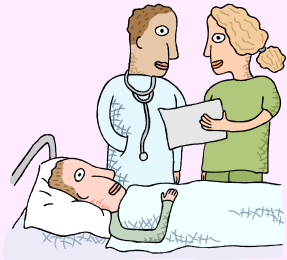
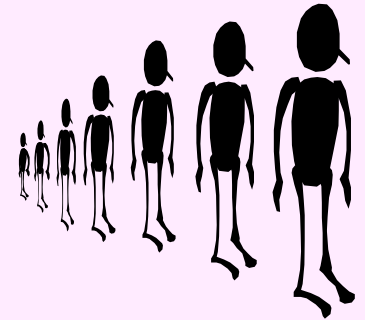


**Disease disturbs social  
function and productivity**

# Utilitarianism & Functionalism



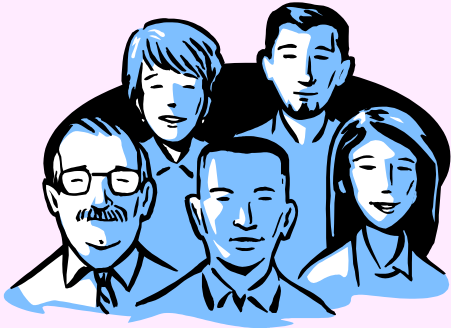
**Disease disturbs social function and productivity**



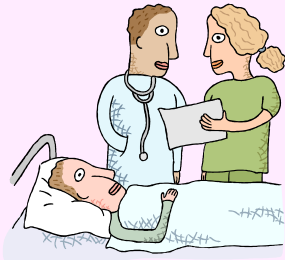
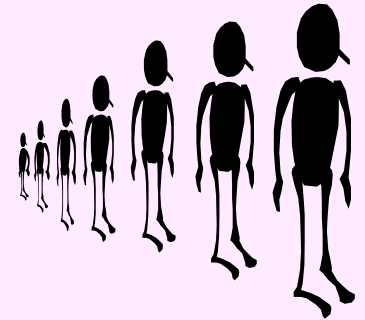
**Depicts health and sickness from perspective of caregivers and investigators**



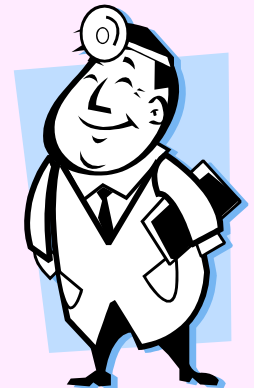
# Utilitarianism & Functionalism



**Disease disturbs social  
function and  
productivity**



**Dwells more on  
physical dysfunction  
than on  
psychosocial disruption**



# Sick Role Theory

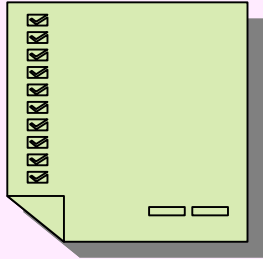
**Illness** is deviant behaviour upsetting productivity when people neglect their social obligations

**Health** is a “capacity for the effective performance of valued tasks” established by society

**Healthcare** is a process of social order to help people meet their obligations.

Parsons (1951)

# Sickness Impact Profile



Structured questions about sickness-related dysfunction and social disruption to measure how respondents feel about the roles and tasks expected of them by society



Gilson *et al.*, 1975

# Disorders



**Normative vs Perceived**

**Bradshaw 1972**

**Condition-to-need**

**Schonfeld 1981**

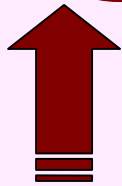
**Propensity**

**Maizels J, Maizels A, Sheiham A, 1993.**

*Community Dent Oral Epidemiol*; **21:340-6**

# Propensity (capacity) for treatment

**High**

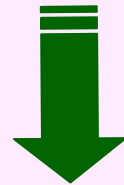


**33%**

**Medium**

**47%**

**Low**



**20%**

**Mojon & MacEntee (1994)**  
**Gerodontology 11:99-107**

Estimate of **Time** for Dental Treatment  
in  
**Long-term Care**

<i>Propensity Group</i>	<i>Average Hours per Subject</i>		
	<i>Unweighted</i>		<i>Weighted</i>
<b>High</b>	<b>2.5</b>	<b>x 1</b>	<b>2.5</b>
<b>Moderate</b>	<b>3.4</b>	<b>x 0.05</b>	<b>1.7</b>
<b>Low</b>	<b>3.5</b>	<b>x 0.01</b>	<b>0.3</b>
<b>Total</b>	<b>3h</b>		<b>1.5h</b>

# Distribution of Biological Problems

- Missing teeth & Prostheses
- Caries
- Mucosa
- Periodontal disease
- Jaw function

Measurement Problems

# Why an SDI?

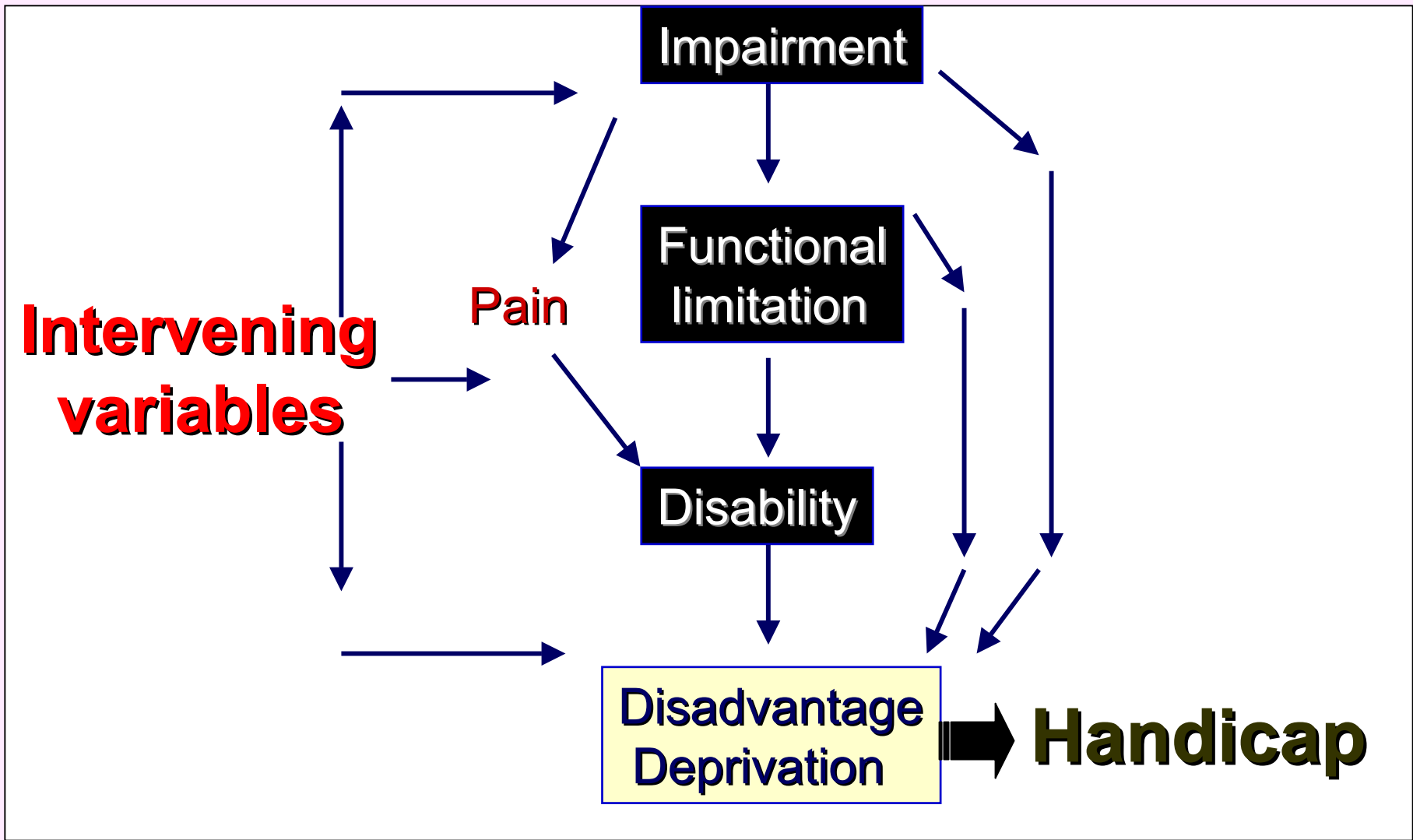
Cohen L, Jago J.(1976)  
Intl J Health Service 6: 681-698.

“To capture **non-clinical impact** of oral disorders on the social, physical and psychological aspects of life, moderated by personal and subjective perceptions of health and illness”

# International Classification of Impairments, Disabilities, and Handicaps (ICIDH)

- ✓ ***impairment*** ...impact on the body;
- ✓ ***disability*** .....impact on the person;
- ✓ ***handicap*** ..... impact on the person  
interacting with the environment.

Wood, 1980  
WHO, 1980



**WHO: ICIDH 1980**

Locker '83

<i>17 Instruments</i>	<i>Conceptual Structure</i>	<i>#Qs</i>
Oral Health Questionnaire	ICIDH	<b>70</b>
<b>Oral Health Impact Profile</b>	<b>ICIDH</b>	<b>49</b>
Liverpool Oral Rehabilitation Questionnaire	Existing SDIs	<b>40</b>
Oral Health-Related QoL-Instrument	Multiple	<b>36</b>
Dental Impact on Daily Living	SIP	<b>36</b>
Subjective Oral Health Status Indicators	Multiple	<b>34</b>
Dental Impact Profile	SIP	<b>25</b>
Oral Health QoL UK	ICIDH2	<b>16</b>
Oral Health QoL Inventory	SIP	<b>15</b>
Social Impacts of Dental Disease	SIP	<b>14</b>
<b>Geriatric Oral Health Assessment Index</b>	<b>ICIDH &amp; SIP</b>	<b>12</b>
Oral Impact on Daily Performances	ICIDH	<b>8</b>
DENTAL	Not specified	<b>6</b>
Oral Health-related QoL Measure	ICIDH & SIP	<b>3</b>
Self-Rated Oral Health	ICIDH	<b>3</b>
Rand Dental Questionnaire	SIP	<b>3</b>
Dental Health Status QoL Questionnaire	Existing SDIs	<b>Unspecified</b>



Mario Brondani

**Validation of a model of oral health in old age: Implications for the sociodental indicators**

**Systematic review of the SDIs and a discussion on their validity**



# Validity?

Construct  
(theory/belief)

Content  
(scope/range)

Criterion  
(concurrent/predictive)

Validity?

**Factorial,  
Translation,  
Intrinsic,  
Practical**

Validity?

**Scores**

# Current 17 SDIs

Questions mostly with negative connotation

*“Have you had difficulty chewing any foods because of problems with your teeth, mouth or denture?”*

OHIP *Slade and Spencer, 1994*

*“How often did you limit the kinds or amounts of food you eat because of problems with your teeth, mouth or denture?”*

GOHAI *Atchison and Dolan, 1990*

*“Have you tried to avoid showing your teeth when smiling or laughing?”*

DIDL *Leao & Sheiham, 1997*

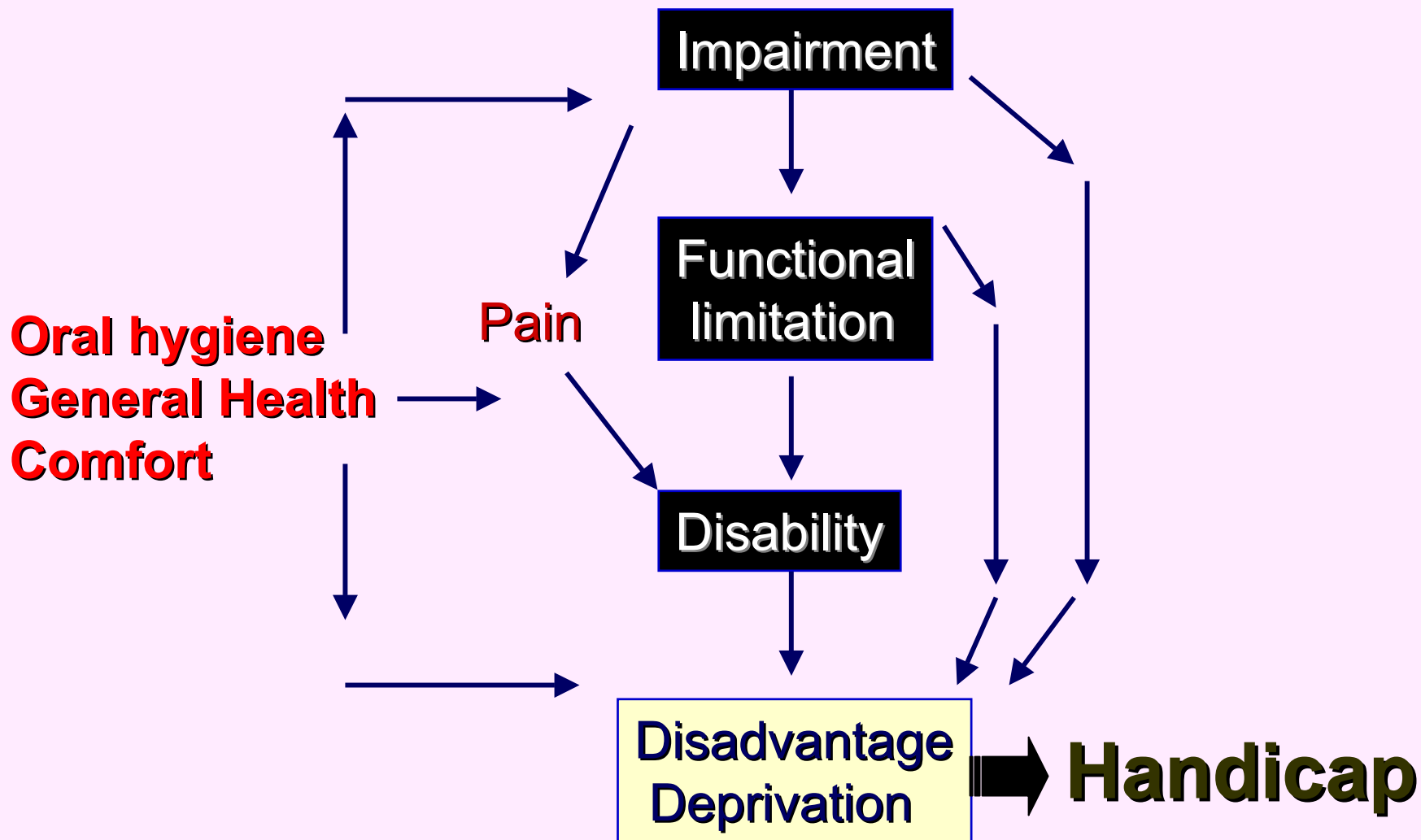
# Positive Questions

- How **happy** are you with your mouth being able to taste your food?

OHQoL Inventory *Cornell et al, 1997*

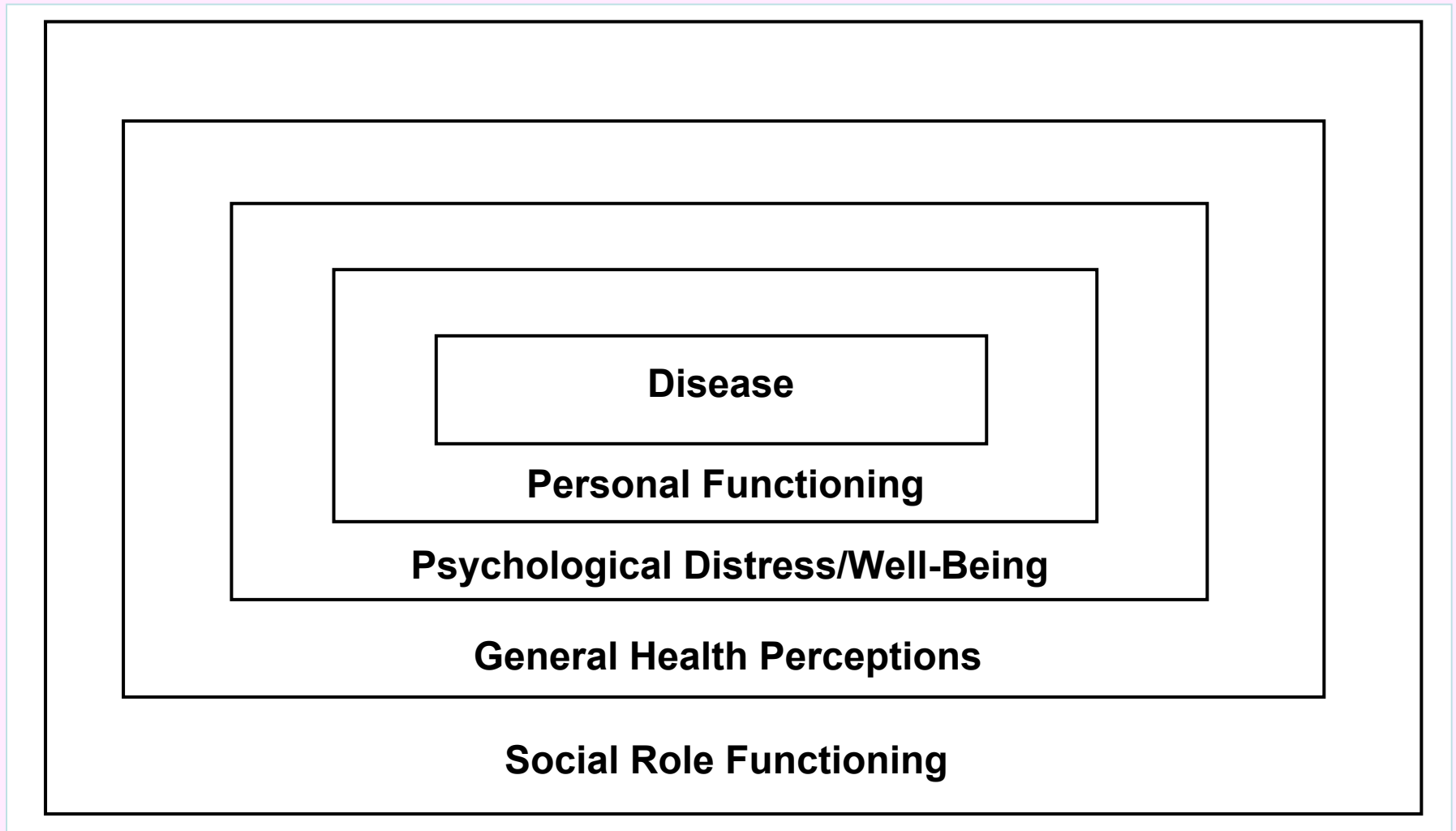
- How often were you **pleased** with the look of your teeth, gums or dentures?

GOHAI *Atchison and Dolan, 1990*

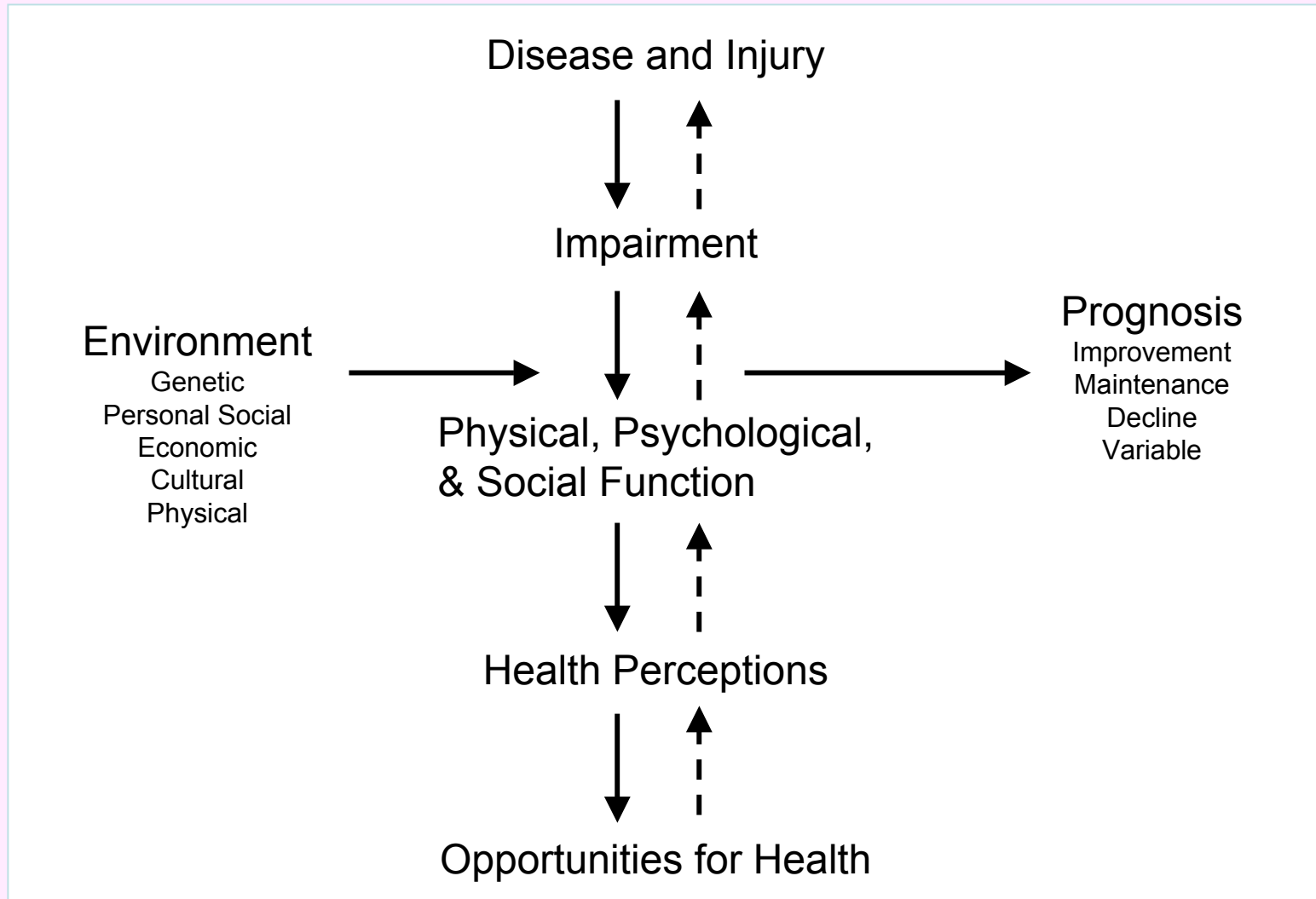


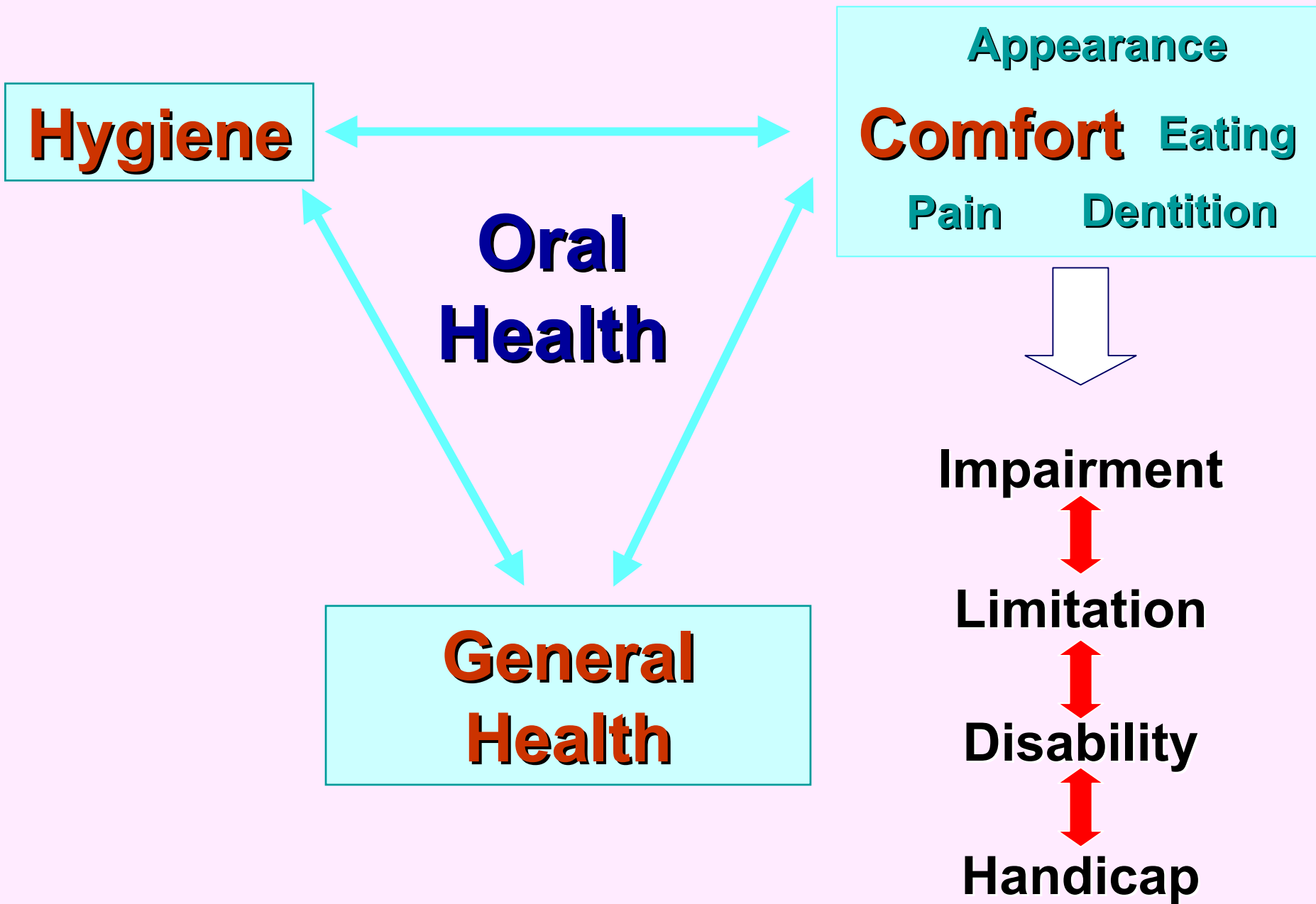
MacEntee *et al.*, 1997  
*Soc Sci Med* 45:1449

# **Influence of the Environment on Health Status (Ware, 1984 )**



# Ebb and Flow of Impairment, Function and Health (Patrick & Bergner, 1990)





# Theories of Aging

- **Adaptation** to disruption of illness  
*(Bury 1982)*
- **Gain and loss** of human progress  
*(Bates 1987)*
- **Fluctuations** of order and disorder  
*(Schroots 1995)*



Mario Brondani

## **Validation of a model of oral health in old age: Implications for the sociodental indicators**

**Brondani MA, MacEntee MI (2006)**

**The concept of validity in sociodental indicators and oral health-related quality of life measures.**

***Community Dent Oral Epidemiol (in press).***

# Conclusions on Validity of SDIs

Brondani & MacEntee (2006). The concept of validity in sociodental indicators and oral health-related quality of life measures. *CDOE* in press

- Theoretical framework has not been tested
- Sick-role theory is conceptual basis for most SDIs
- Many questions are ambiguous, vague, or limited in scope;
- Poor predictors of health-related beliefs and behaviours

# Conclusions on Validity of SDIs

Process of validating needs broader scope to evaluate continuously:

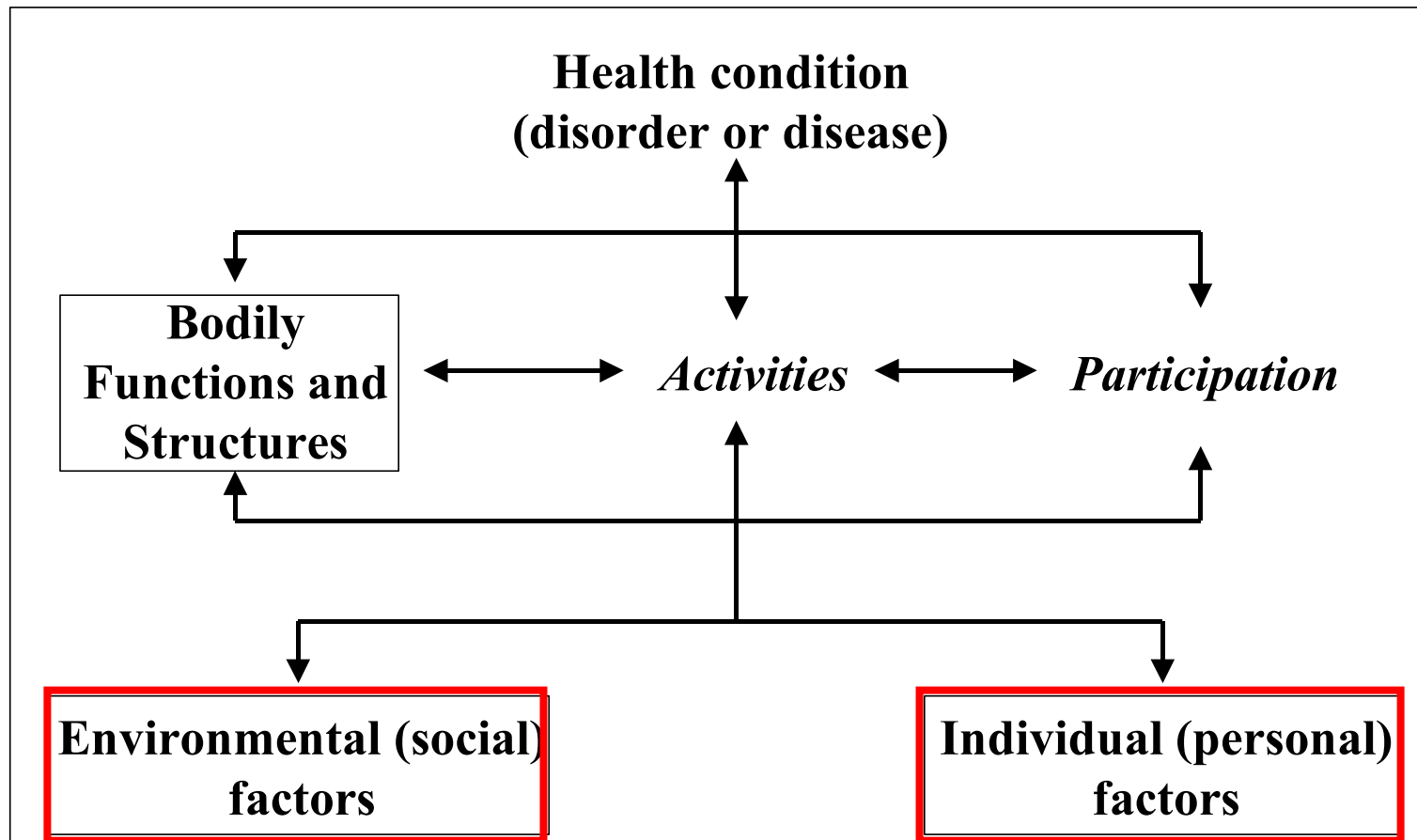
- the theoretical framework;
- the content of the questions;
- the predictive potential of the scores within the natural environment of the population.

Brondani & MacEntee (2006). The concept of validity in sociodental indicators and oral health-related quality of life measures. *CDOE* (in press)

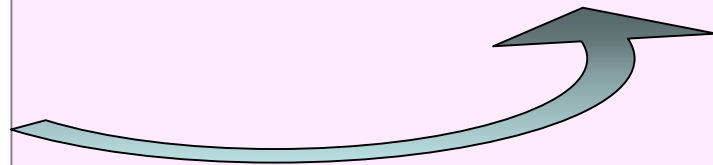
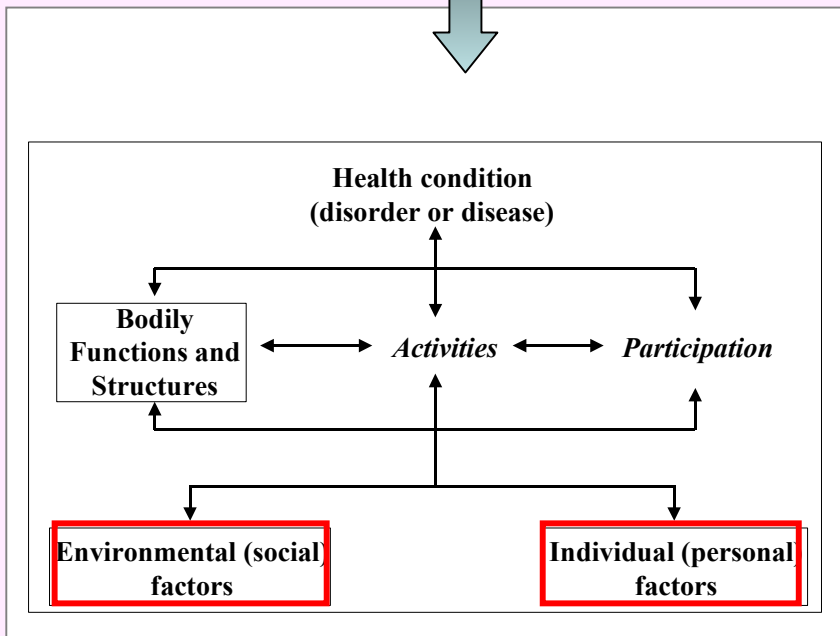
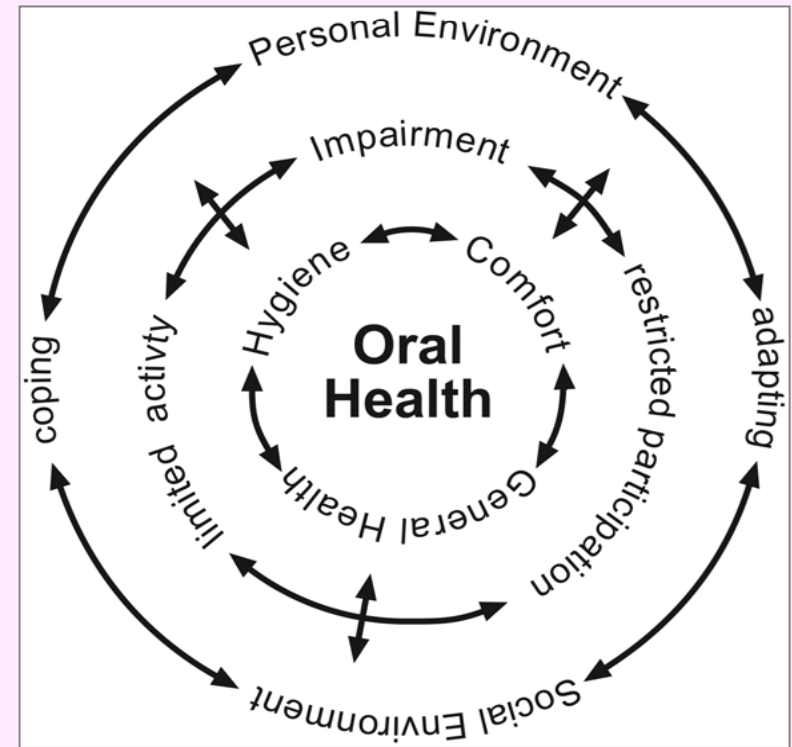
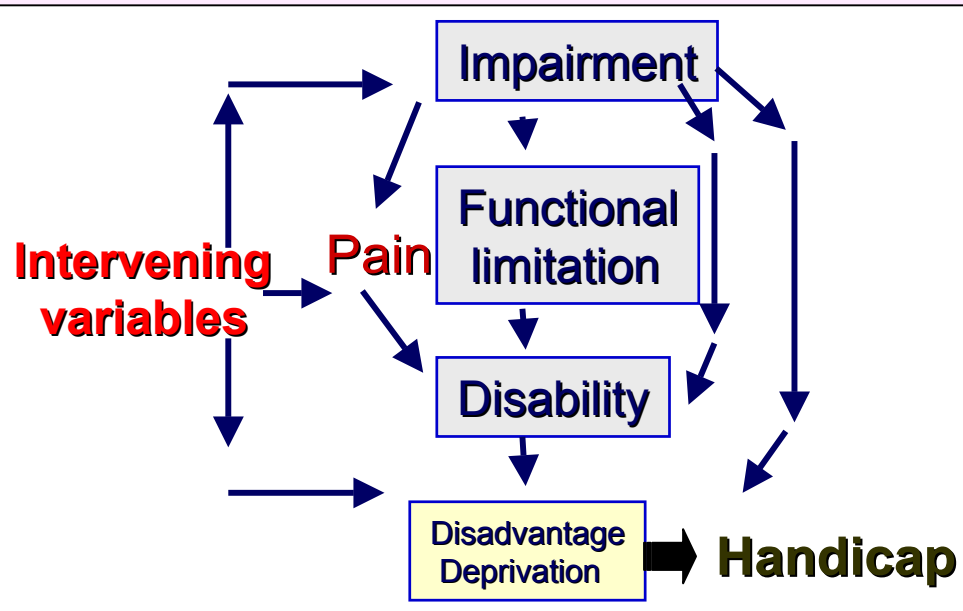
# A Theoretical Change

## Classification of Functioning, Disability and Health (ICF)

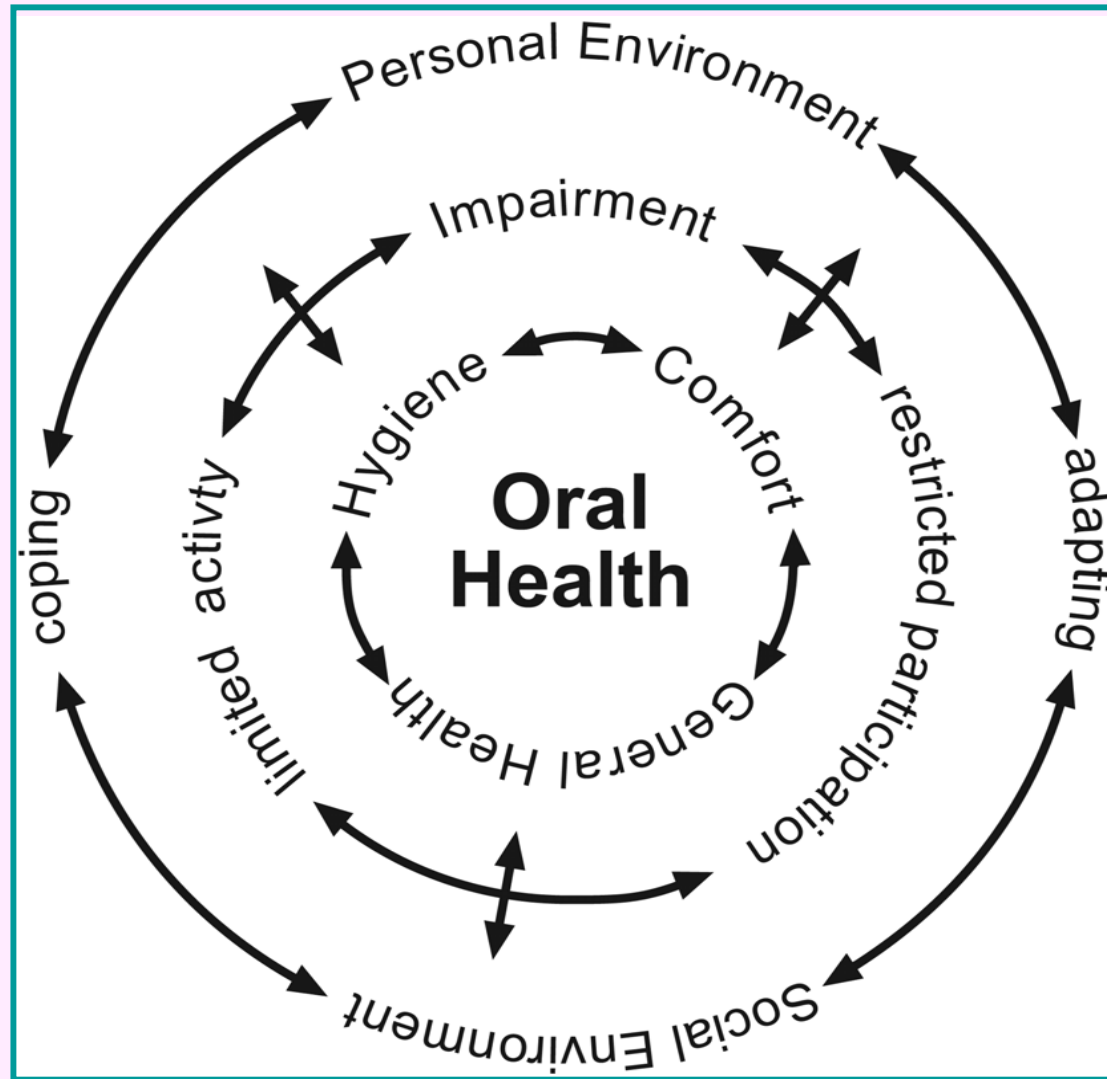
WHO 2001



# Old Models



# An Existential Model



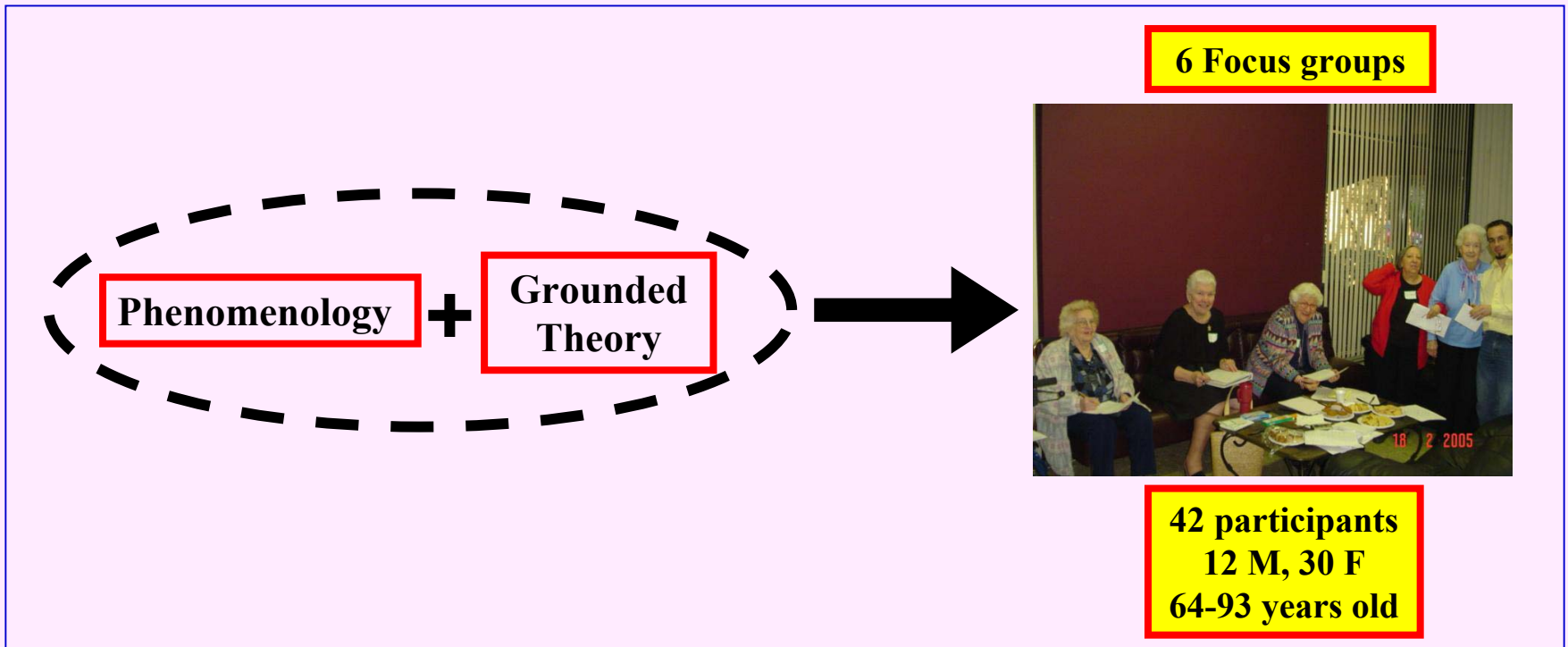
# Brondani's Analysis

**6** focus groups, **42** older adults

- ✓ **Transcribe** *verbatim*;
- ✓ **Continuous** process: transcribe, analyze, collect..., transcribe, analyze, collect....., etc;
- ✓ Define **original** and **new** constructs within the emerging model(s).

# Validation of a model of oral health in old age: Implications for the sociodental indicators.

**Brondani *et al.***

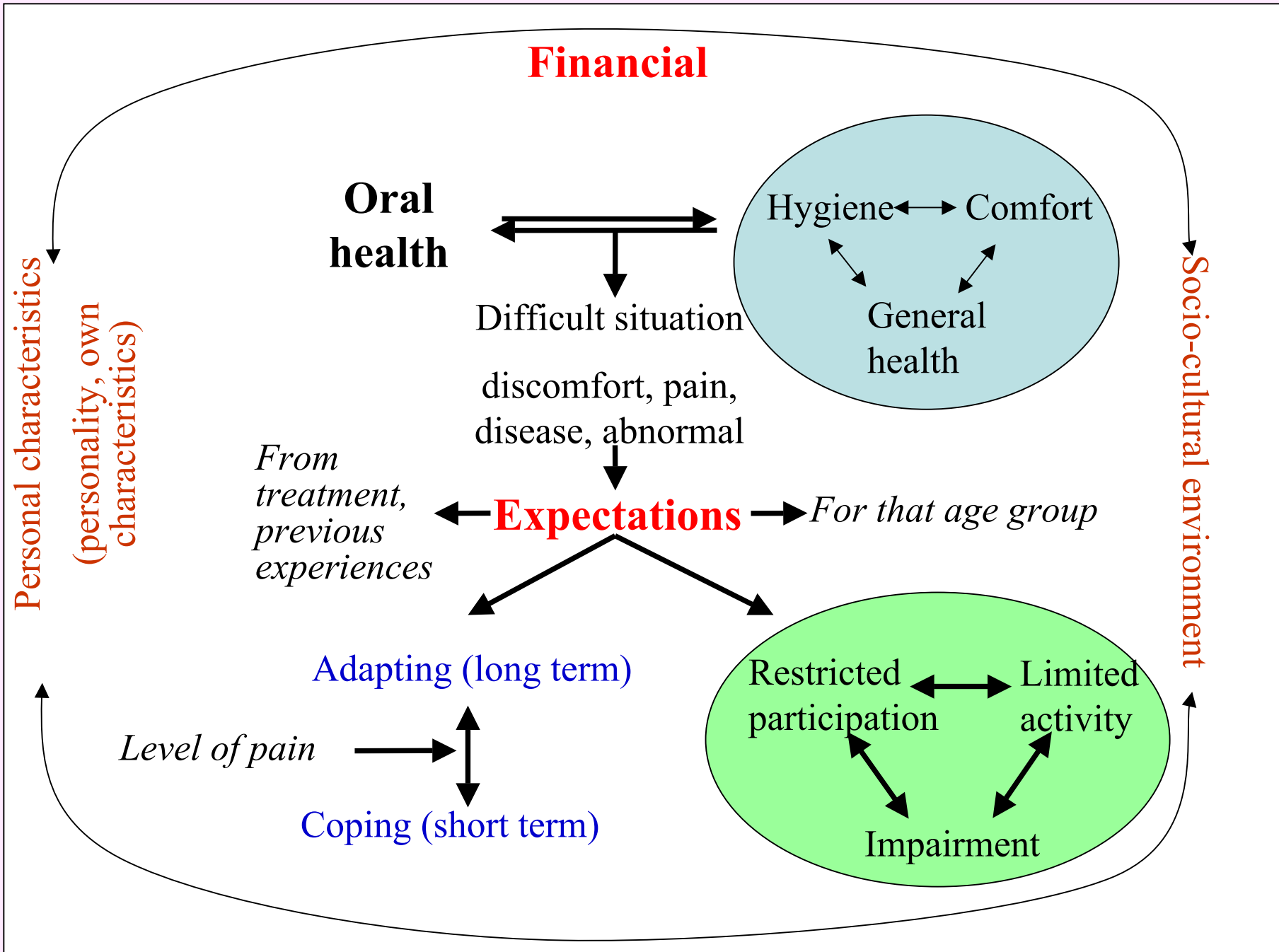


# Focus Group Situational Vignette

- *Rosita and Victor reside in the same building, and are active in the community centre.*
- *Rosita argues with Victor because he doesn't always wear his dentures, not even when eating.*

- *She tells him to wear his denture to “look better”, however, he often goes to the centre without his dentures,*
- *Rosita never goes out without dentures, even when they are uncomfortable;*
- *She is starting to avoid Victor's company when outside the building!*

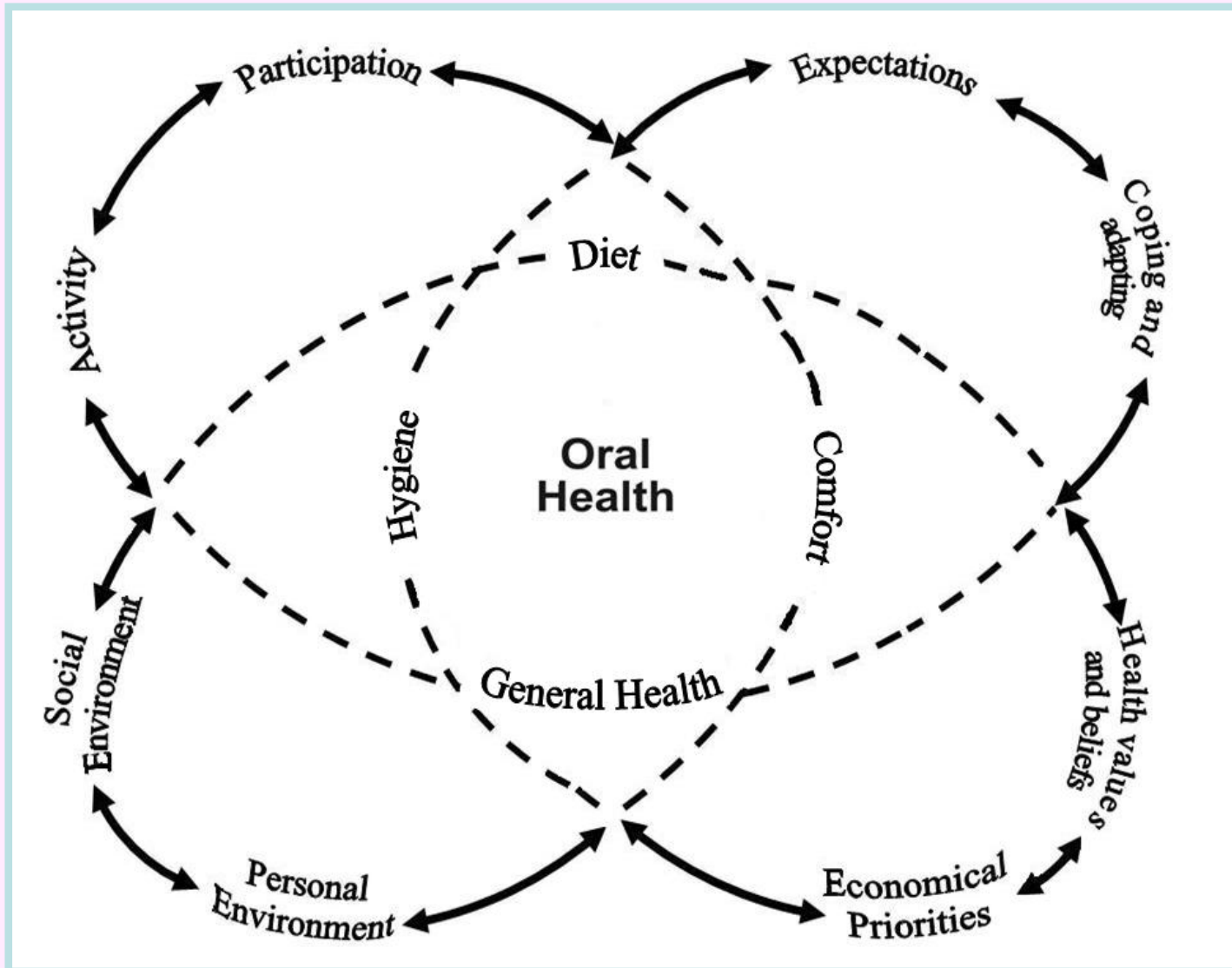




FG 3 West End 2<sup>nd</sup> group at community centre

# Atomic Model

Brondani 2006



# Brondani's Conclusions

## The participants:



**Accepted oral impairments and disabilities as positive conditions;**



**Balanced gain and losses, adjusted expectations, and used social supports;**



**Accepted the components of MacEntee's model but elaborated on how it functions in their lives.**

# New Perspective on QoL

**Meaning** of disease & disability;

**Values** and beliefs;

**Cultural** influences on the  
environment;

Adapting & coping strategies;

**Positive** perspective and acceptance.

# Analysis

## Model appreciation

Moody *et al*, 2003

- Identify constructs/themes/ideas
- Connect original and new constructs;
- Test the model for:
  - *completeness*
  - *parsimony*
  - *interdependence*

# Results... thus far:

## *Completeness*

- Financial, Expectations, Social Support, Diet.

## *Parsimony*

- *“every one of these (constructs) is very important.”*

## *Independence*

- New frames of reference!

# Thank You!



# **Oral Health & the Environment**