FUTURE RESEARCH AGENDA ON ORAL HEALTH INEQUALITIES

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1. Background: from GOHIRA® onwards
2. Phases of oral health inequality research
3. Examples of inequalities
4. How to measure and create goals for reducing and even eliminating inequality?
5. What type of research is needed?
1. GOHIRA® and Background

“There has been much research into the biological and social determinants of general and oral health, including the influence of psychological, social, environmental, economic, cultural, and political factors on health outcomes (Marmot and Bell, 2011), but this has not led to the improvements that could be expected.”

The challenge is to devise strategies that reduce the overall burden of disease while simultaneously decreasing disease inequalities between social groups, between and within countries.
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2. Phases of oral health inequality research

Weyant RJ, Sgan-Cohen HD, Sheiham A.
The Research Agenda, ICOHIRP Monograph
Kilbourne et al. (2005) propose that health inequalities research occurs in three sequential phases:

**Phase One: Detection.**

- Definition of vulnerable population groups
- Effective measurement of inequalities
- Utilization of existing data resources
Phase two: Understanding.

• The role of genomic, molecular influences, biological and non-biological factor interactions

• Social and economic conditions have large and independent effects on health status

• Members of vulnerable communities should be trained and become fully engaged and integrated as contributing members of the research infrastructure?

• The structural and financing schemes that lead to health inequalities and what policy changes are needed to alleviate the problem?
Phase Three: Reducing.

Phases one and two were tilted more toward the science of development of inequalities, this phase acknowledges research on intervention on policy and practice issues:

• What are the interventions that are achievable, socially acceptable, scalable, and cost-effective?
• What approaches can be used to improve provider practice towards delivery of appropriate care to all patients?
• How can policy changes be implemented?
• What strategies will result in substantial, sustainable and cost-effective changes that move the community toward a health promoting environment?
3. Examples of inequalities
Periodontal disease

CPI scores 3&4 among 35-44 year olds in 44 countries

Human Development Index (HDI) measures the average achievements in a country including: a long and healthy life, knowledge and a decent standard of living.

Oral cancer

Median age standardized oral cancer mortality rates for males and females for 172 countries according to HDI.

Complete tooth loss
USA adults, aged 20-64 years

4. How to measure and create goals for eliminating and reducing oral health inequality?
Oral health surveillance

In 1979 the most important goal ever to be formulated for global oral health was announced by WHO. By the year **2000**, the global average for dental caries was to be no more than **3 DMFT** at **12 years of age**. At the World Health Assembly in 1979, this declaration was unanimously allocated as being the overriding priority for WHO. In 1983 oral health was declared as part of the Strategy for Health for All (WHA36.14) and in 1989 the Organization endorsed the promotion of oral health as an integral part of Health for All by the year 2000 (WHA42.39).
Complete tooth loss
USA adults, aged 20-64 years

There are two ways to completely “eliminate” inequalities:
Complete tooth loss

USA adults, aged 20-64 years

- 9.28% below poverty level
- 9.28% above poverty level
Complete tooth loss
USA adults, aged 20-64 years

- 4.41% below poverty level
- 4.41% above poverty level
The third way is to reduce inequalities:
A standardized, universal and comparable measuring tool for inequalities is clearly called for. We could start with something quite simple (echoing the 1979 WHO document). This could be the ratio of the prevalence among those above the poverty line compared to those below. Once this ratio is calculated, the next step would be to establish a goal of reduction or even elimination of differences. For example, a goal could be set, to reduce inequalities, by 30%, within the next decade. This goal could be adapted and modified for different countries.

(This was discussed and suggested at the PER-IADR Dubrovnik conference GOHIRN workshop in 2014 and is incorporated in the present ICOHIRP Monograph)
5. What type of research is needed?
# Levels of Evidence

(Oxford Centre for Evidence-Based Medicine – May 2001)

<table>
<thead>
<tr>
<th>Level</th>
<th>Therapy/Prevention, Aetiology/Harm</th>
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</thead>
<tbody>
<tr>
<td>1a</td>
<td>systematic review of RCTs</td>
</tr>
<tr>
<td>1b</td>
<td>Individual RCT</td>
</tr>
<tr>
<td>2a</td>
<td>systematic review of cohort studies</td>
</tr>
<tr>
<td>2b</td>
<td>Individual cohort study</td>
</tr>
<tr>
<td>3a</td>
<td>systematic review of case-control studies</td>
</tr>
<tr>
<td>3b</td>
<td>Individual Case-Control Study</td>
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<tr>
<td>4</td>
<td>Case-series</td>
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<tr>
<td>5</td>
<td>Expert opinion without explicit critical appraisal, or based on physiology, bench research or &quot;first principles&quot;</td>
</tr>
</tbody>
</table>
Community program trials

• Convey the RCT concept to a more real-life level.
• They ask: “Is the program effective in practice in the community?”
• A community program trial needs to be set up *a priori* as a test and a measurable demonstration.
• **A control population is imperative.**
Controlling in community program trials

• Parallel groups: several community programs are studied prospectively.
• Externally controlled: data from other sources.
• Self-controlled: before – after.
• Continued vs. discontinued programs.
• Abundant confounding and ethical questions.
Three Levels of Research

Level 1

- RCTs, analytical surveys, etc.
- The basis for Evidence Based Dentistry
- Very similar to basic science “laboratory-like” settings
Three Levels of Research

Level 1

Level 2

- Translational research
- Public health applied research
- Community program trials
Three Levels of Research

Level 1

Level 2

Level 3
• Research with the potential to reduce and even eliminate inequalities
• Multi-centered systematic reviews of community program trials
• Establishing a consensual global policy
Thank you