Pathways to Oral Health
Inequalities

Georgios Tsakos
Dept. of Epidemiology and Public Health, UCL

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Outline

✓ Explaining oral health inequalities: pathways
  ✓ Materialist
  ✓ Behaviours
  ✓ Psychosocial factors
  ✓ Life course approach

✓ Do they actually explain inequalities? Evidence from general and oral health

✓ Implications for action
The shape of oral health inequalities: social gradient
Lower SEP associated with higher risk of caries lesions or experience.

Association stronger in developed countries.

Inequalities not due to diagnostic and treatment concepts

Risk of bias in included studies (evidence graded as low or very low).

CSDH conceptual framework for action on the social determinants of health

Explanations for health inequalities

✓ Materialist
✓ Cultural/behavioural
✓ Psycho-social
✓ Life course

Materialist pathways

- Emphasizes the role of the external environment
- **Income / wealth and what it enables:** access to goods and services; protection from exposures to material (physical) risk factors such as:
  - Poor housing;
  - Diet of low nutritional value;
  - Physical hazards at work;
  - Hazardous outside environments;
  - Pollution;
  - Barriers to accessing public services.
- Does not sufficiently explain the social gradient in health.

Income-related inequalities in dental service utilization, Europeans aged 50+ yrs

* non-significant
Cultural/behavioural pathways

- Health inequalities as a result of differences in risky health behaviours (mainly diet, oral hygiene, smoking, alcohol consumption, and physical activity) between socio-economic groups.

- Suggests that people from lower socioeconomic backgrounds are more likely to engage in health compromising behaviours than people from higher socioeconomic backgrounds, leading to higher levels of disease.

- Due to differences in beliefs, norms and values influenced by education and social class.

Inequalities in health behaviours

Higher socio-economic position is related to:

- Lower probability of smoking.
- Higher probability of healthy diet.
- Higher probability of physical exercise.
- Better weight control.
- Lower probability of alcohol overconsumption.
- Higher probability to participate in screening.

All these affect health

Do health behaviours “explain” health inequalities?

- All-cause mortality showed clear SES gradient (age – sex – race - urbanicity adjusted).
- When health risk behaviours (cigarette smoking, alcohol drinking, sedentary lifestyle, relative body weight) were considered, the SES gradient persisted.

“Socioeconomic differences in mortality are due to a wider array of factors and, therefore, would persist even with improved health behaviours among the disadvantaged”

Health Inequalities and Behaviours

How much of the social gradient in health can be explained by health-related behaviours?

• “Health behaviours attenuated the association of SES with mortality by 75% in Whitehall II but only by 19% in GAZEL”

• They are likely to be major contributors of health inequalities only in contexts with a marked social characterisation of health behaviours

SEP to oral health... through Behaviours

- Childhood SES 3-15 yrs
- Oral Health-related Beliefs Age 15
- Oral Health-related Beliefs Age 18
- Parental Oral Health-related Beliefs
- Oral Health-related Beliefs
- Dental Attendance
  - Attendance Age 26
  - Attendance Age 32
- Tooth Brushing
  - Tooth brushing Age 26
  - Tooth brushing Age 32
- SES
  - SES Age 26
  - SES Age 32
- # of Missing Tooth Surfaces Age 38
- # of Decayed Tooth Surfaces Age 38
- Oral Health-related Quality of Life Age 38

Do health behaviours “explain” oral health inequalities?

US adults (NHANES III)

![Bar chart showing odds ratio for perceived poor oral health](chart)

- Education = 12 yrs
- Education < 12 yrs

Odds ratio for perceived poor oral health
- Adjusted for confounders
- Adjusted also for behaviours

Do health behaviours “explain” oral health inequalities?

- Representative sample of 9th and 11th grade students across Pennsylvania
- Lower SES associated with higher prevalence of DMFT and higher prevalence of severe caries
- Lower SES associated with worse behavioural patterns
- “Disparities in caries experience, however, cannot be accounted for by SES-associated differences in brushing, flossing, sealant use, fluoride exposure, or recency of use of dental services”

Health Behaviours and Inequalities

- Corresponding to the social gradient in health, the social gradients for health behaviours are ubiquitous. “Poor people behave poorly”\(^1\).
- People in the lower social grades are more likely to engage in a wide range of risk related behaviours and less likely to practice health promoting ones.
- Behavioural risk factors cluster cross-sectionally and accumulate longitudinally.
- But the health behaviours gradient is not sufficient to fully explain the health gradient

Psycho-social pathways

• Social inequality influences health through perceptions of control and social standing, namely, a person’s position in society relative to others.

• People of lower SEP are hypothesized to experience higher levels of psychosocial stress

• Due to having less control over their lives, lower levels of social support and less job security

Does social capital explain social inequalities in inequalities?

- Systematic review:
- Social capital associated with socioeconomic inequalities in health
- Some studies showed that “social capital has a stronger positive effect on health for people with a lower socioeconomic status”
- Evidence for both a buffer and a dependency effect

Does stress “explain” health inequalities?

![Graph showing odds ratios for Ischaemic Heart Disease and Periodontitis by education level, with adjusted and adjusted for allostatic load comparisons.](image)

SEP to oral health... through Psychosocial factors

Life course model

• Health status at any given age is the result not only of current conditions but also of prior living conditions (starting before birth)

• Health inequality is a result of inequalities in the accumulation of material, social, psychological, and biological advantages and disadvantages over the life course of individuals

• Health and social circumstances influence each other over time.

The Dynamic Relationship Between Health and Socioeconomic status


http://www.macses.ucsf.edu/downloads/Reaching_for_a_Healthier_Life.pdf
Inequalities across the life course – emphasis on younger ages

“Influences and actions along the life course”; model inspired by Fair Society, Healthy Lives

Strategic Review of Health Inequalities in England:
The Marmot Review – Fair Society Healthy Lives
Social inequalities in oral health: from evidence to action

Edited by Richard G Watt, Stefan Listl, Marco Peres and Anja Heilmann
Upstream - downstream interventions

‘Upstream’
Healthy Public Policy

National &/or local policy initiatives
Legislation/Regulation
Fiscal Measures
Healthy Settings- HPS
Community Development
Training other professional groups
Media Campaigns
School dental health education
Chair side dental health education
Clinical Prevention

‘Downstream’
Health Education & Clinical Prevention

Oral Health Promotion - Childsmile

- **Childsmile**: national programme designed to improve oral health of children in Scotland and reduce inequalities in dental health and access to services \(^1\).

- **Childsmile Core**: Every child provided with a Dental Pack (toothbrush, tube of 1000ppm F-toothpaste and information leaflet) on at least six occasions by the age of 5 yrs.

- **Childsmile Practice**: referral by health visitor straight to a dental practice or to a Dental Health Support Worker

- **Childsmile Nursery and Childsmile School**: F varnish for children aged 3+ yrs living in the most deprived areas.

- **Initial outcomes**: reductions in dental caries of 3-year-olds across SEP groups in Scotland\(^2\).

Best Practices in Europe

- Best practices in oral health promotion and prevention across Europe
- Initial step - “Live” toolkit

http://www.oralhealthplatform.eu/best-practices/
Community Psychosocial Interventions and Oral Health Inequalities

- Intervention in one municipality of Japan
- Creation of 'salons' (or community centers) to boost social participation as a way of preventing long-term disability in senior citizens
- Participation in the centre associated with 2.52 times higher odds for reporting excellent or very good self-rated health.
- “Investing in community infrastructure to boost the social participation of communities may help promote healthy ageing.”

Sugar tax and Oral Health Inequalities

- German population, aged 14-79 years
- Modelling caries increments and costs over 10 years
- Caries increment: 82.27 million teeth at 20% tax on SSBs; 83.02 million teeth without sugar tax.
- Reduction especially in younger (rather than older) individuals and those with low income.
- Treatment costs savings: 8 billion Euros.
- Additional tax revenue: 38 billion Euros.
- “...a 20% sales tax on SSBs is likely to reduce caries increment, especially in young low-income males, thereby also reducing inequalities in caries”.

Summary

✓ Emphasis on potential explanations (pathways) in order to understand and address inequalities

✓ Different pathways – not one simple or complete explanation

✓ Social gradient also for health behaviours – it does not fully “explain” the social gradient (inequalities) in oral health

✓ Interventions should focus on wider social determinants (“causes of the causes”) – “upstream” emphasis

✓ Common Risk Factor Approach – integration of oral health into general health

✓ To change behaviours, we need to change the environment
What good does it do to treat people's illnesses ... 

... and then send them back to the conditions that made them sick? (Marmot)
Thank you for your attention

g.tsakos@ucl.ac.uk

www.ucl.ac.uk/dph

www.icohirp.com

MSc Dental Public Health

www.ucl.ac.uk/mscdph

@UCL_DentalPH

UCL Department of Dental Public Health