The Convergent Roles of Socioeconomic Position, Psychosocial Stress and Innate Immunity in Oral Disease

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BACKGROUND AND OBJECTIVE

Socioeconomic position (SEP) and psychosocial stress have consistently been linked to an increased risk for oral disease, yet a significant knowledge gap persists as to how these social conditions ‘get under the skin’ and become biologically embodied to promote poor oral health. Here, we aim to identify and conceptualize the different mechanisms by which social and psychosocial conditions interact with and affect biological systems in oral disease.

METHODS

- Systematic search of epidemiological studies
- Databases (Ovid MEDLINE, Embase, Web of Science, Scopus, PsychINFO)
- Fowkes and Fulton checklist for quality assessment and bias control

<table>
<thead>
<tr>
<th>Exposure</th>
<th>Social and psychosocial exposures. Keywords: socioeconomic, psychological, stress, psychosocial stress, socioeconomic status, income, education</th>
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<tbody>
<tr>
<td>Outcome</td>
<td>oral disease; periodontitis, dental caries. Keywords: oral disease, periodont*, dental caries, immun*, biological markers</td>
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<tr>
<td>Study design</td>
<td>all study designs were included, except for case-reports</td>
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<td>inclusion criteria</td>
<td>original research studies, English language, human studies</td>
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<tr>
<td>Exclusion criteria</td>
<td>studies assessing acute stress conditions; studies not assessing a biological marker</td>
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</table>

RESULTS

- Eight studies were eligible for inclusion.
- Only one study assessed dental caries, whereas the other studies focused on periodontitis.
- Higher levels of perceived stress and stress hormones (cortisol) were associated with:
  - increased allostatic load
  - inflammatory biomarkers (ILs and MMPs)
  - inflammatory cell counts (NKs)
  - oral bacterial counts
- Relationships explained by SEP, race, financial stress.

DISCUSSION

- Most studies did not account for mediators, e.g. oral hygiene habits, dietary sugars.
- Health services and health policies were not tackled.
- Dynamicity and interactive relationships between the different variables are to be evaluated.

CONCLUSION & FUTURE DIRECTIONS

Social and psychosocial factors correlate with an increased risk to oral disease by affecting the body’s biological systems. Yet, research on how the broader determinants of health such as income, education and access to health services affect biological dynamics and shape oral health is needed.

POLICY IMPLICATIONS

- Evidence-informed public policy: understanding the mechanisms of how social and structural factors affect our biology may enable us to identify points of intervention to reduce oral health inequalities.
- Healthy public policy

REFERENCES


* For a full list of references, please contact: noha.gomaa@mail.utoronto.ca

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