

Institution: University College London
Unit of Assessment: 3A - Allied Health Professions, Dentistry, Nursing and Pharmacy: Dentistry
Title of case study: Oral epidemiology and the use of subjective measures of oral health and quality of life
<p>1. Summary of the impact</p> <p>Research by the UCL Dental Public Health Group has led the international field in the development and validation of quality of life (QoL) measures associated with oral health. Tsakos and Sheiham instigated the development of the Oral Impacts on Daily Performances (OIDP) measure in 1996 followed by the Child Oral Impacts on Daily Life (Child-OIDP) in 2004. Both of these outcome measures have been employed in epidemiological surveys of needs assessment by local health providers in London resulting in enhanced use of resources, better staff training, and improved patient care and health care access. These measures have been employed in the most significant NHS surveys of oral health of adults and children in the UK as well as used by health organisations across the globe. The outcomes of Tsakos' research on oral epidemiology and QoL, together with engagement with policy makers in the UK and Europe, have raised the profile of oral health and is influencing health care policies nationally and internationally.</p>
<p>2. Underpinning research</p> <p>Understanding the quality of life (QoL) of individuals is cardinal in the delivery of all health care as it provides a means to evaluate the personal and social impact of disease and its treatment and thus provides a more rounded appreciation of disease than clinically-derived markers alone. Researchers within UCL Dental Public Health (DPH) have undertaken an extensive programme of research into the theoretical basis, development, psychometric testing and application of oral health related quality of life (OHRQoL) measures in the UK and internationally. These outcome measures have been further employed in oral epidemiology through a variety of studies and provided relevant information for the provision of services to improve the oral health of the population.</p> <p>In 1996, the UCL DPH group developed the Oral Impacts on Daily Performances (OIDP) index [1]. This outcome measure assesses oral impacts that seriously affect a person's daily life and was based on the WHO conceptual framework for the International Classification of Impairments, Disabilities and Handicaps. Over the following years we went on to adapt and evaluate this measure in different settings and cultures and there is evidence of its use in 23 countries. For example, in 2001 we demonstrated that the OIDP is a valid and reliable measure of oral health-related quality of life in elderly people in Great Britain and Greece [2].</p> <p>In 2004 we developed a relevant QoL measure for use with children aged 8+ years (the Child-OIDP) in a study of children in Thailand [3]. We then evaluated the Child-OIDP for use among children in the UK [4] and it has since been used in 14 different countries, including in national epidemiological surveys.</p> <p>In addition to the development of these outcome measures, we have also made methodological advances in the administration and interpretation of OHRQoL measures. For example, in 2008 we developed self-administered versions of OIDP and Child-OIDP which have allowed wider use in clinical and epidemiological studies [5]. Our work has also set recommended standards for reporting and interpreting OHRQoL measures [6].</p> <p>We have since gone on to lead the practical application of OHRQoL measures for assessing oral health needs and planning services. We have formulated a socio-dental approach to needs assessment, which we have tested in Thailand (2006), Korea (2009) and Malaysia (2012) and have demonstrated the applicability and relevance of this socio-dental approach for different populations. We have developed pathways for assessing oral health needs which incorporate</p>

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measures of:

- i. clinical oral health,
- ii. OHRQoL (determined by OIDP or Child-OIDP according to the age of the population)
- iii. behavioural propensity

We have further applied these measures to determine the impact of specific oral disorders (e.g. aphthous stomatitis, gingivitis, malocclusion) upon QoL of affected children and adult populations and to assess the outcomes of clinical interventions (e.g. periodontal therapy) [7], thus providing relevant data for planning and evaluating primary and secondary oral health care services.

3. References to the research

- [1] Adulyanon S, Sheiham A. Oral Impacts on Daily Performances. In: Measuring Oral Health and Quality of Life, ed. Slade, G D. Chapel Hill: University of North Carolina, Dental Ecology, 1997. Copy available on request.
- [2] Tsakos G, Marcenes W, Sheiham A. Evaluation of a modified version of the index of Oral Impacts On Daily Performances (OIDP) in elderly populations in two European countries. Gerodontology. 2001 Dec;18(2):121-30. <http://dx.doi.org/10.1111/j.1741-2358.2001.00121.x>
- [3] Gherunpong S, Tsakos G, Sheiham A. Developing and evaluating an oral health-related quality of life index for children; the CHILD-OIDP. Community Dental Health 2004; 21(2):161-9. Copy available on request.
- [4] Yusuf H, Gherunpong S, Sheiham A, Tsakos G. Validation of an English version of the Child-OIDP index, an oral health-related quality of life measure for children. Health Qual Life Outcomes. 2006 Jul 1;4:38. <http://dx.doi.org/10.1186/1477-7525-4-38>
- [5] Tsakos G, Bernabe E, O'Brien K, Sheiham A, de Oliveira CM. Comparison of the self-administered and interviewer-administered modes of the child-OIDP. Health and Quality of Life Outcomes 2008;6:40. <http://dx.doi.org/10.1186/1477-7525-6-40>
- [6] Tsakos G, Allen PF, Steele JG, Locker D. Interpreting oral health-related quality of life data. Community Dentistry Oral Epidemiology 2012; 40(3):193-200. <http://dx.doi.org/10.1111/j.1600-0528.2011.00651.x>
- [7] Tsakos G, Bernabé E, D'Aiuto F, Pikhart H, Tonetti M, Sheiham A, Donos N. Assessing the minimally important difference in the Oral Impact on Daily Performances index in patients treated for periodontitis. Journal of Clinical Periodontology 2010; 37 (10): 903-909. <http://dx.doi.org/10.1111/j.1600-051X.2010.01583.x>

4. Details of the impact

Enhancing delivery of oral health care in local services

In 2009, Camden and Islington PCT used the OIDP to undertake a survey of the dental needs of elderly people in nursing homes. This indicated high levels of unmet treatment need and considerable impacts of oral conditions on the daily lives of older residents. As a result, in 2012 Camden and Islington PCT established oral health measures as a key component of their local standards for residential homes in Islington. Homes must now ensure that all new residents receive an oral health assessment to identify and arrange urgent treatment; the oral hygiene practice of all residents should be recorded daily; a referral system for attendance to the dentist must be put in place for those in need; nursing home staff are trained to undertake the above oral health related tasks. In practical terms, care has been improved and existing resources more effectively employed. There is a more immediate recognition of oral disease and increased numbers of residents have been referred to the Community Dental Services to receive treatment. In addition, North Central London NHS commissioned the provision of high concentration fluoride toothpaste to

cover the preventive needs of those residents identified as at risk for oral diseases [a, b].

In 2010, the ODP was a major component of a needs assessment survey carried out at Holloway Prison, London. This found that 73% of prisoners reported at least one oral impact on daily performances. Prisoners were more likely than the general female population to engage in oral health damaging behaviours such as high sugar intake and smoking. This has led to the London Borough of Islington/NHS North Central London commissioning the Kent Community Health NHS Trust to provide an enhanced oral health promotion service in HMP Holloway for 2013-14 [a].

Finally, as a result of our epidemiological work, Islington carried out a pilot community-based fluoride varnish programme in 2010. The success of this project led to Islington Clinical Commissioning Group investing in a community-based fluoride varnish scheme. In the scheme fluoride varnish is applied, twice a year, to the teeth of 6,000 children attending children's centres, community nurseries and schools in the most deprived areas of Islington [a, c].

Use in major national surveys of Dental Health

Since 1968, a national adult oral health survey has been conducted in the UK every 10 years. In 2008 the UCL Dental Public Health Group joined the Office for National Statistics, National Centre for Social Research and a consortium of universities including Newcastle, Birmingham, Cardiff and Dundee to conduct the 2009 Adult Dental Health Survey (ADHS) for England, Wales and Northern Ireland. The ODP was included in this survey for the first time to assess how severely oral health problems impacted on the ability of people to carry out basic functions of their daily life [d]. The ADHS 2009 results have been used by the NHS to shape the planning and commissioning of the NHS dental services. NHS England report that this survey "*is pivotal to our planning oral health services. [Its findings] point to a reduction in dental caries and rates of restoration, a very rapid reduction in edentulousness in old age and the emergence of an ageing population of adults with heavy restoration and potentially complex needs. Our services and workforce continues to develop to address the needs that arise in the knowledge of what we expect to see*" [e].

In 2009, the Child-ODP was used by the NHS Dental Epidemiology Programme (NHS DEP) for England in their national survey of child dental health. The programme report that: "*The information produced from the nationally coordinated surveys of child dental health is used by PCTs when conducting oral health needs assessments at local level and forms an important component of the commissioning of local services*" [f]. Subsequently the Child-ODP has been included in the Children's Dental Health Survey which is due to be conducted in England, Wales and Northern Ireland in autumn 2013.

The ODP and Child-ODP have also been used in national dental health surveys in Norway, Brazil, Thailand and Korea. For example, a recent national survey of children and adolescents in Thailand included the assessment of oral health-related quality of life by using the Child-ODP and ODP indices in 12- and 15-year-old groups. This showed that in general oral impacts were quite prevalent, with dental caries affecting children's quality of life most (accounting for 50% of overall oral impacts), while aphthous stomatitis and gingivitis negatively affected the QoL of between a quarter and a third of the population. As a result of this survey, the Dental Health Division of the Thailand Department of Health set new oral health goals across the country to cover the aspect of oral health-related quality of life [g].

Influencing policy debate in Europe

Through his involvement in the European Association of Dental Public Health (EADPH), Tsakos has been instrumental in the establishment of the Platform for Better Oral Health in Europe, a European-wide initiative supported by the EADPH, the Association for Dental Education in Europe, the Council of European Chief Dental Officers, and the International Dental Health Foundation [h]. This forum aims to facilitate communication and engagement with key stakeholders and non-clinical audiences in terms of policy development and priority setting for the EU. It promotes oral health and the cost-effective prevention of oral diseases in Europe and provides recommendations

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to policymakers with regard to EU oral health policy developments. Through his epidemiological and QoL expertise, Tsakos has represented the Platform in meetings with key policy makers including European Commission officials (e.g. Deputy Director-General of DG SANCO) and European Parliament members. Furthermore, the UCL DPH group epidemiological research has been widely used to inform the Platform's reports and policy debate documents. As a result, 2020 targets for improved oral health in Europe were established, and a Europe-wide consultation has begun [i].

5. Sources to corroborate the impact

- [a] Standards for nursing homes can be viewed here:
[http://www.islington.gov.uk/publicrecords/library/Public-health/Quality-and-performance/Profiles/2012-2013/\(2012-12-19\)-Oral-health-in-adults-fact-sheet.pdf](http://www.islington.gov.uk/publicrecords/library/Public-health/Quality-and-performance/Profiles/2012-2013/(2012-12-19)-Oral-health-in-adults-fact-sheet.pdf)
Impacts on nursing homes and Holloway Prison can be corroborated by Julie Billett, Director of Public Health for Camden and Islington. Contact details provided.
- [b] Impacts on service provision (referrals, training, compliance of homes) can be corroborated by Clinical Director, Dental Services, Whittington Health NHS. Contact details provided.
- [c] <http://www.islington.gov.uk/publicrecords/library/Public-health/Quality-and-performance/Profiles/2012-2013/%282012-11-13%29-Public-Health-Outcomes-Framework-August-2012.pdf> See p.115.
- [d] Executive summary of ADHS findings: <http://www.hscic.gov.uk/catalogue/PUB01086/adul-dent-heal-surv-summ-them-exec-2009-rep2.pdf> See p.18 for key findings from OIDP. Full report on Outcome and Impact (the section using the OIDP is here: <http://www.hscic.gov.uk/catalogue/PUB01086/adul-dent-heal-surv-summ-them-the7-2009-rep9.pdf>)
- [e] Letter from Chief Dental Officer, NHS England. Copy available on request.
- [f] Results of the survey can be found here: <http://www.nwph.net/dentalhealth/survey-results-12.aspx>.
See p.12 of the standard protocol for use of the OIDP:
http://www.nwph.net/dentalhealth/reports/National_Protocol_for_2008_09_12%20yr%20olds.pdf.
Findings of the survey and statement about how it is used are found in the file: "NHS Dental Epidemiology Programme for England Oral Health Survey of 12 year old Children 2008/2009"
- [g] Letter from Head of Dental Health Division, Thailand Department of Health. Copy available on request.
- [h] <http://www.oralhealthplatform.eu/>
- [i] Impacts on the Platform for Better Oral Health in Europe can be corroborated by Professor Kenneth Eaton, Chair of the Platform for Better Oral Health in Europe. Contact details provided.