

Summary of: The dental health of three-year-old children in Greater Glasgow, Scotland

A. D. McMahon,¹ Y. Blair,² D. R. McCall³ and L. M. D. Macpherson⁴

FULL PAPER DETAILS

¹Reader in Epidemiology, ²NDIP Co-ordinator Greater Glasgow and Clyde, ³Consultant in Dental Public Health, ⁴Professor of Dental Public Health, Community Oral Health, Level 8, University of Glasgow Dental School, 378 Sauchiehall Street, Glasgow, G2 3JZ
*Correspondence to: Dr Alex McMahon
Email: a.mcmahon@dental.gla.ac.uk;
Tel: + 44 (0)141 211 9750

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Objective To report on the dental health of three-year-old children in Greater Glasgow, and to examine the amount of dental caries associated with deprivation in this young age group. **Design** Dental inspections in nursery schools. **Subjects and methods** The national inspection programme using BASCD criteria was extended to include an additional group of nursery attending three-year-olds in Greater Glasgow in 2006/7 and 2007/8. Caries experience was analysed by logistic regression models and ROC plots. **Results** Fourteen percent of this population was sampled in 2006/7 and 19% in 2007/8 (usable data n = 1,711 in 2006/7, 2,428 in 2007/8). Mean d_3mft was 1.1 in 2006/7 and 1.0 in 2007/8. The prevalence of caries experience was 26% in 2006/7 and 25% in 2008/9 (33% and 32%, respectively, for children in deprived areas). The adjusted odds-ratio for caries experience for children living in the most deprived areas was 2.90 (2.31, 3.64), $p < 0.001$. There was a high rate of caries in the upper anterior teeth. **Conclusion** It was feasible to conduct large scale caries surveys of three-year-olds in a nursery setting. Poor dental health and inequality commence early in life. Caries prevention should be targeted toward deprived families from birth.

EDITOR'S SUMMARY

It has to be a matter of some national shame that we continue to allow young children to suffer from an entirely preventable disease, namely dental caries. In the twenty-first century we should surely have solved this problem by now, given that we know the aetiology, progression and crucially preventive steps required to reduce it to minimal levels if not eradicate it altogether. But we haven't.

This epidemiological study reports on three-year-olds and is the first of its type using the accepted BASCD criteria for such a large sample of this age group. The advent the Adult Dental Health Survey in 1968, and then subsequent Child Dental Health Surveys (CDHS) in the UK has enabled the most detailed and significant advances in dental health care planning, albeit at a gradual pace over the intervening years. So the advent of a study of this type indicating the feasibility of large scale epidemiology in this, admittedly young, age group is to

be welcomed. Certainly an important step towards improving the situation is to be able to quantify the problem so as to be able to institute the necessary steps to combat it and it may be that either this age group needs to be included in national CDHS in the future or that a separate exercise needs to be instituted.

However, while knowing the extent of the problem is an important first step it is only the beginning. We know that caries is a disease suffered disproportionately in deprived and lower socio-economic groups of society and this is also abundantly true for the very youngest members, as detailed here, as it is for their older siblings, peers and parents. Until, and unless, we have the will within society in general as well as the political backing to achieve improvements merely knowing the numbers will solve nothing and continue to condemn some infants to painful and damaging disease.

The full paper can be accessed from

the *BDJ* website (www.bdj.co.uk), under 'Research' in the table of contents for Volume 209 issue 4.

Stephen Hancocks
Editor-in-Chief

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IN BRIEF

- The three-year-old age group has never been researched in such detail before.
- The sample size is very large (over 4,000 children), which creates accurate results that are useful for other researchers to use.
- Sets a baseline for government targets.
- Readers will be able to assess how much prevention will be required in the future.
- Includes the effects of deprivation on dental health.

COMMENT

This study reports on an epidemiological survey of pre-school children attending nurseries in Greater Glasgow with an average age of 3.7 years and a range of 3.0 to 4.3 years. It illustrates the benefit of extending epidemiological surveys beyond the cohorts usually involved in the UK nationally co-ordinated programme, whilst still employing recognised standardised criteria.

The UK has benefited for many years from having a nationally co-ordinated dental epidemiological programme which uses robust standardised criteria for training and calibration of examiners, sampling, examination, clinical measurement and analysis. The data that arises from these programmed surveys is relied upon by a range of groups and they clearly show inequalities in the distribution of caries among cohorts of 5- and 12-year-olds.

Achieving reductions in health inequalities among five-year-olds depends on an understanding of the caries picture in younger cohorts. The study reported here showed that in two surveys, carried out in consecutive years, around a quarter of the children examined had experience of dentinal caries. The prevalence of this was nearer 33% among children from more deprived socioeconomic groups. Caries affecting the upper incisors was widespread, suggesting that long-term bottle use with sugared drinks was an important source of damage. The findings of the study illustrate that interventions are required when children are very young, before they are weaned, so that

healthier habits are started from that point onwards.

If the normal BASCD epidemiological convention regarding missing incisors was applied for reasons of standardisation and comparability with older groups, it should be borne in mind that caries levels in incisors will have been under-reported to some degree. A previous study in Manchester has shown this suppression to be about 10% and the important impact of extractions due to caries is artificially reduced.

The study notes the higher levels of disease among children from more deprived groups who are almost three times more likely to experience caries. However, the use of the Receiver Operating Characteristic plot shows that deprivation explains only part of the differences in distribution.

G. M. Davies,
Specialist in Dental Public Health;
Development Manager,
The Dental Observatory

AUTHOR QUESTIONS AND ANSWERS**1. Why did you undertake this research?**

The aim of this particular study was to report on the dental health of three-year-old children in NHS Greater Glasgow and Clyde, and to examine the amount of dental caries associated with deprivation in this young age group.

2. What would you like to do next in this area to follow on from this work?

We will continue these inspections for future years, and will also examine anterior/posterior patterns of decay by deprivation category.