

(OHSR5)

# **ORAL HEALTH SERVICES RESEARCH STRATEGY**

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**(March 2001)**

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## **Introduction**

The aims of the Public Dental Services as stated in the Health Strategy 'Shaping a Healthier Future' (1993) and the Dental Health Action Plan (1994) are: -

- to reduce the level of disease in children
- to improve the level of health in the population overall
- to provide adequate treatment services to children and to medical cardholders.

The Dental Health Action Plan set oral health goals for key age groups in the population. A further set goal was the *establishment of a standardised oral health information collection system in each Health Board*. The purpose of setting these goals was to facilitate the monitoring of changes in oral health. In particular, to measure progress towards the oral health goals, of the whole population and for defined groups within the population who have special needs.

The strategy document also proposed that any *evaluation of existing services and the establishment of new services should be based on the criteria of quality, accountability and equity as well as health and social gain*.

To assist these developments, King's College London was awarded a contract to support the Department of Health & Children and the Health Boards to establish a framework for evaluating the oral health services. The aim is 'to review the status of research (in its widest sense) in the oral health services and to advise and assist in the promotion and co-ordination of a research strategy throughout the services, e.g. training in research methodologies and the process of audit, critical appraisal skills, the establishment of ethics committees, etc'.

## **Situation Analysis**

An initial situation analysis has been undertaken to identify any gaps in services. Also reviewed are the current status of research and audit activities, critical appraisal, peer review networks, resources and skill mix within the dental services, all in the context of national reports on health and dental health (e.g. the Dental Health Action Plan).

This report presents an overview of findings in terms of the range and quality of recent research and the relevance of the research in terms of the goals of the Dental Health Action Plan.

It includes a review of recent available Irish oral health services research and its pertinence to need, services and how they should change.

## **Objectives of the review and fulfilment of the first phase of deliverables**

- 1 Identify existing national and local, published and unpublished reports, papers and other documents (including MSc dissertations).
- 2 Report on the range of information available.

- 3 Report on any recommendations
- 4 Determine the use to which the information has been applied.

For the purpose of the review, oral health services research is understood to be that research which increases the understanding of health, ill health and the process of healthcare and that which enables an assessment of the interventions used in order to try to promote health, to prevent ill health or to improve the process of healthcare.

### **Method for Review**

#### 1 Identify research papers

A systematic search for published and unpublished data has been carried out as described below.

- i) Medline database has been searched.
- ii) Hand searching of the Journal of the Irish Dental Association, other journals found to be significant and scientific conference reports of the Irish division of the IADR has been completed.
- iii) A search of the 'grey literature' has been carried out by writing to or personal contact with relevant individuals and organisations, including the Principal Dental Surgeons.
- iv) Reference lists of relevant papers have been hand searched.
- v) Information has been supplied by the Deans of Cork and Dublin Dental Schools.

#### 2 Assessing papers for inclusion

Inclusion criteria for the review are: -

- i) papers on Irish oral health services research, as defined above.
- ii) papers less than 10 years old.
- iii) earlier key research reports (for example national surveys).
- iv) relevant papers brought to our attention.

#### 3 Assessment of individual papers

A method of data collection has been developed, piloted and refined to facilitate systematic appraisal of the research papers. Variables include research topic, study design, area of study, quality of the study and any outcomes of the study in terms of how the findings were publicised, whether the findings have policy implications or not and if they have been applied.

#### 4 Quality control

A sample of ten per cent of papers have been reviewed by a second researcher and compared with the original assessment as an audit measure.

## 5 Data analysis

The data were entered onto a computer database to facilitate analysis.

### Preliminary results

One hundred and eighty-two studies have been reviewed and added to the database. A brief summary of the findings is given below.

The number of studies in each research area is shown in Table 1.

**Table 1: Number of Studies in Each Research Area**

<b>Research Area</b>	<b>Number of studies</b>
Health status	85
Health needs	14
Health services	26
Health determinants	17
Health interventions	61
Knowledge, attitude and behaviour	43
Quality assurance	10
Other	14
<b>Total</b>	<b>270</b>

This data is presented graphically in Figure 1.

The category of research and the number of studies in each category are shown numerically in Table 2 and graphically in Figure 2.

**Table 2: Number of Studies in Each Research Category**

<b>Category of Research</b>	<b>Number of Studies</b>
Survey	67
Cross sectional analytical	35
Ecological	6
Case control	0
Cohort	10
Randomised controlled trial	10
Field trial	1
Traditional review	15
Systematic review	0
Meta-analysis	0
Audit	18
Qualitative	1
Other	24
<b>Total</b>	<b>187</b>

An initial summary has also been carried out on the subjects of the research. The findings are shown in Table 3 and Figure 3.

**Table 3: Number of Studies Involving Each Subject Category**

<b>Research subjects</b>	<b>Number of Studies</b>
Adults	44
Children	59
Health care workers	13
Teachers	2
Students	9
Institutionalised	3
Handicapped	6
Elderly	4
Other special needs	7
Other	28
<b>Total</b>	<b>175</b>

### **Perceived Research Gaps**

Thirty-nine studies have investigated the oral health status of child populations and 24 studies have investigated the status of adults. However, from Table 4 it can be seen that there are very few studies on the oral health status of special needs groups. (See Appendix I).

**Table 4: Number of Studies on Health Status of Special Needs Groups**

<b>Special Needs Group</b>	<b>Number of Studies (% of studies on health status)</b>
Elderly institutionalised	2 (2.4)
Cleft lip and palate	2 (2.4)
Handicapped	4 (4.7)
Elderly	2 (2.4)
Homeless	1 (1.2)
Travellers	1 (1.2)
<b>Total</b>	<b>12 (14.3)</b>

With regard to study design, *most have either been surveys or cross sectional analytical studies. Very few randomised controlled trials, systematic reviews or cost analysis studies have been undertaken.* This is reflected in the study area. Figure 1 demonstrates the largest number of studies has involved health status investigations.

Whilst 21 studies have investigated water fluoridation and reported on the continuing beneficial effects of this intervention, there has been little investigation into other

preventive or operative procedures. The types of interventions investigated with the corresponding number of studies are shown in Table 5.

**Table 5: Type of Investigation and Number of Studies**

<b>Health Intervention</b>	<b>Number of Studies</b>
Water fluoridation	21
Anti-plaque mouthwash	6
Dental health education	3
Periodontal medicaments	3
Bonding agents	2
Fluoride and prevention	2
Fluoride mouthwash	2
Fluoride supplements	2
Fluoride toothpaste	2
Operative response	2
Orthodontic treatment	2
Amalgam crown restorations	1
Anti-calculus toothpaste	1
Anti-caries agents	1
Biopsy	1
Cleft lip and palate repair	1
Endodontic therapy	1
Fissure sealants	1
Mandibular fracture reduction	1
Minor oral surgery	1
Periodontal therapy	1
Preventive strategies	1
Salivary stimulants	1
<b>Total</b>	<b>59</b>

*Few studies have been identified which are of direct relevance to the goals of the Dental Health Action Plan.*

#### **Dental Health Action Plan 1994**

One of the main objectives of the Dental Health Action Plan was to set oral health goals which could be used to evaluate the public dental services effectiveness in improving the level of oral health of the population of the Republic of Ireland. The following goals for the year 2000 were set:-

- 1 at least 85% of five-year-olds in optimally fluoridated areas and at least 60% of five-year-olds in less than optimally fluoridated areas will be free of dental caries in their deciduous teeth.
- 2 twelve-year-old children in optimally fluoridated areas will have on average no more than one decayed missing or filled permanent tooth, and in less than

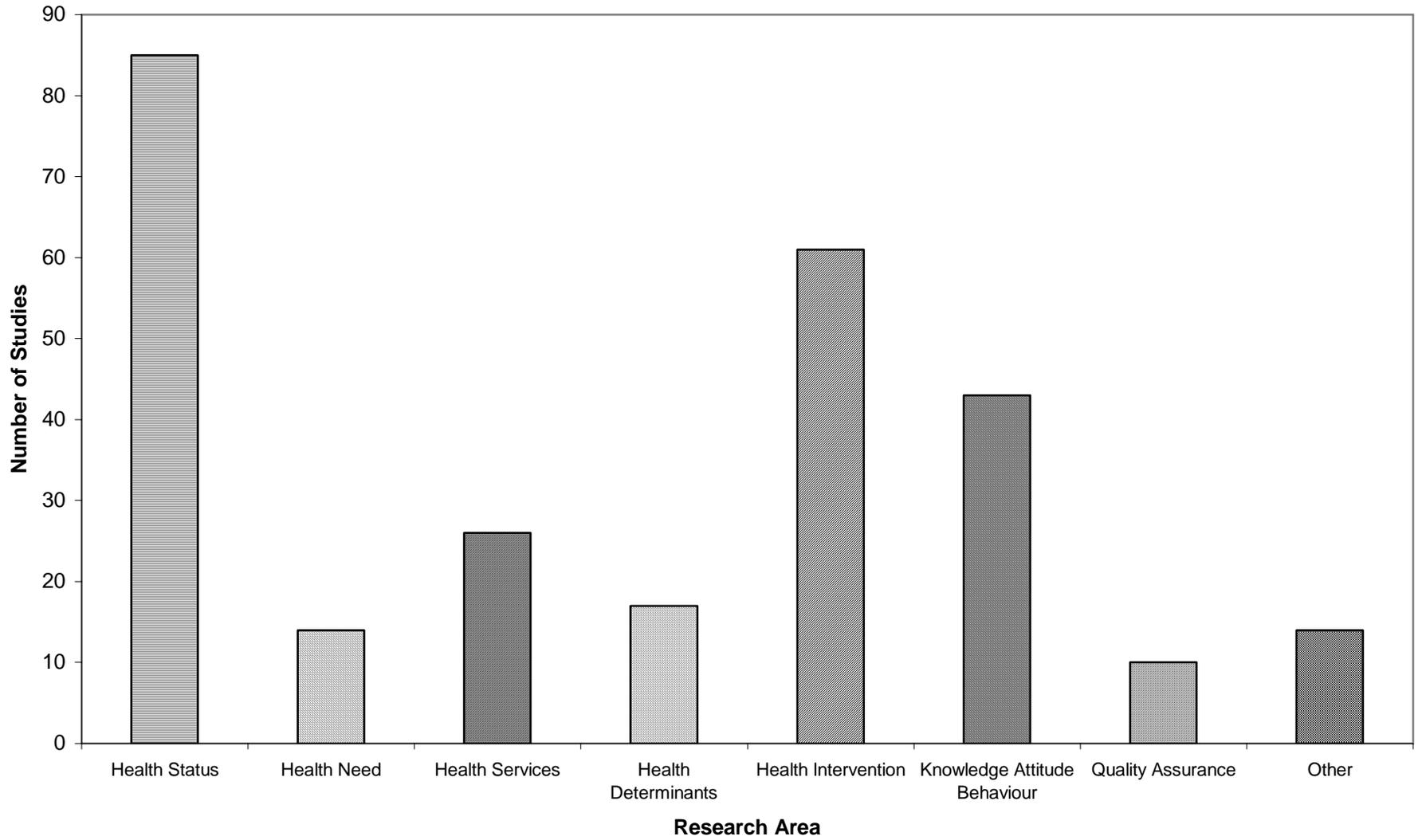
- optimally fluoridated areas on average no more than two decayed missing or filled permanent teeth.
- 3 the average number of natural teeth present in 16-24 year olds will be 27.
  - 4 not more than 2 per cent of 35-44 year olds will have no natural teeth.
  - 5 not more than 42 per cent of people aged 65 years and over will have no natural teeth.

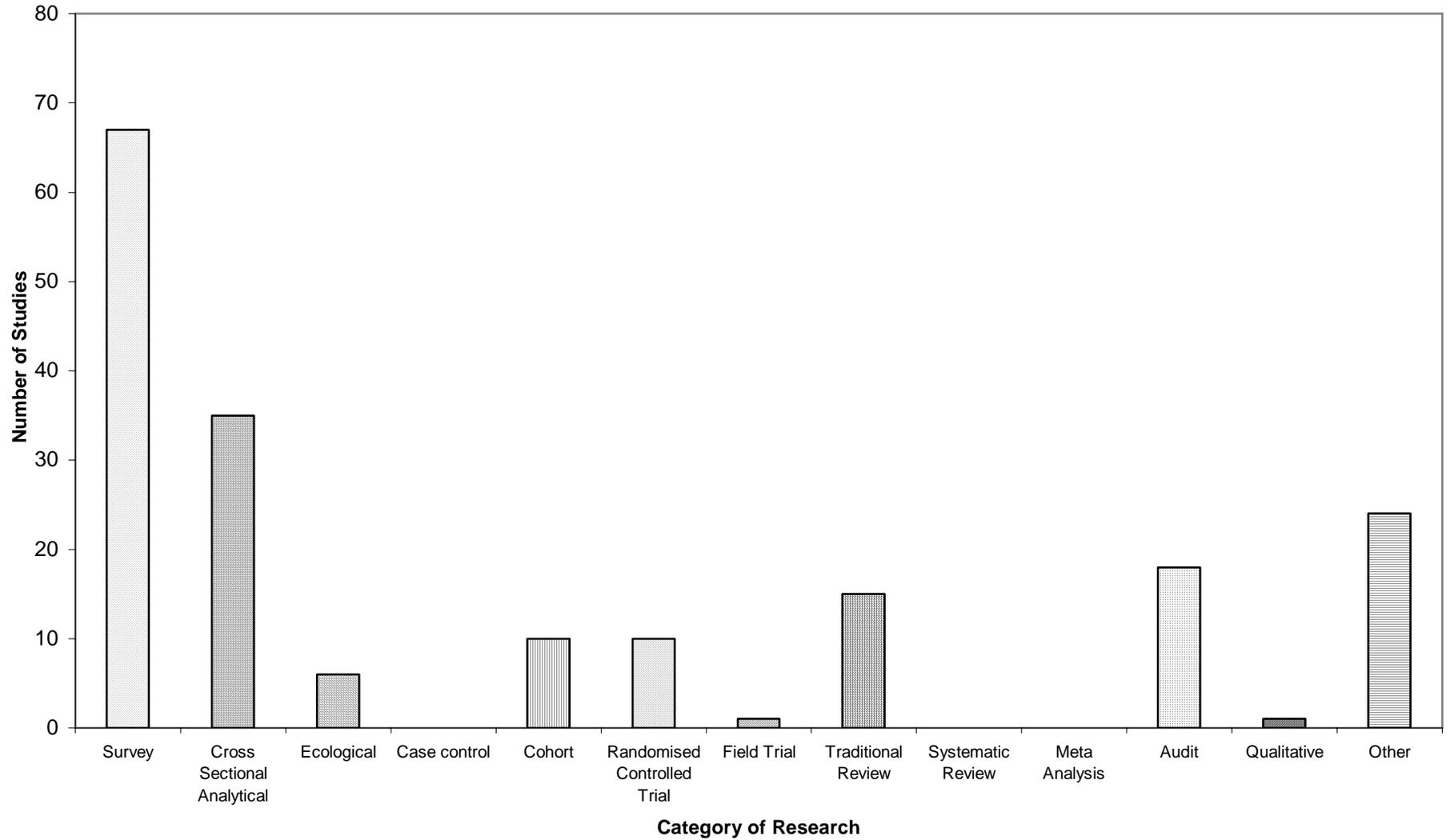
From the literature reviewed to date, it is not possible to comment on progress towards goals 3, 4 and 5 as no studies have been identified which investigate these areas.

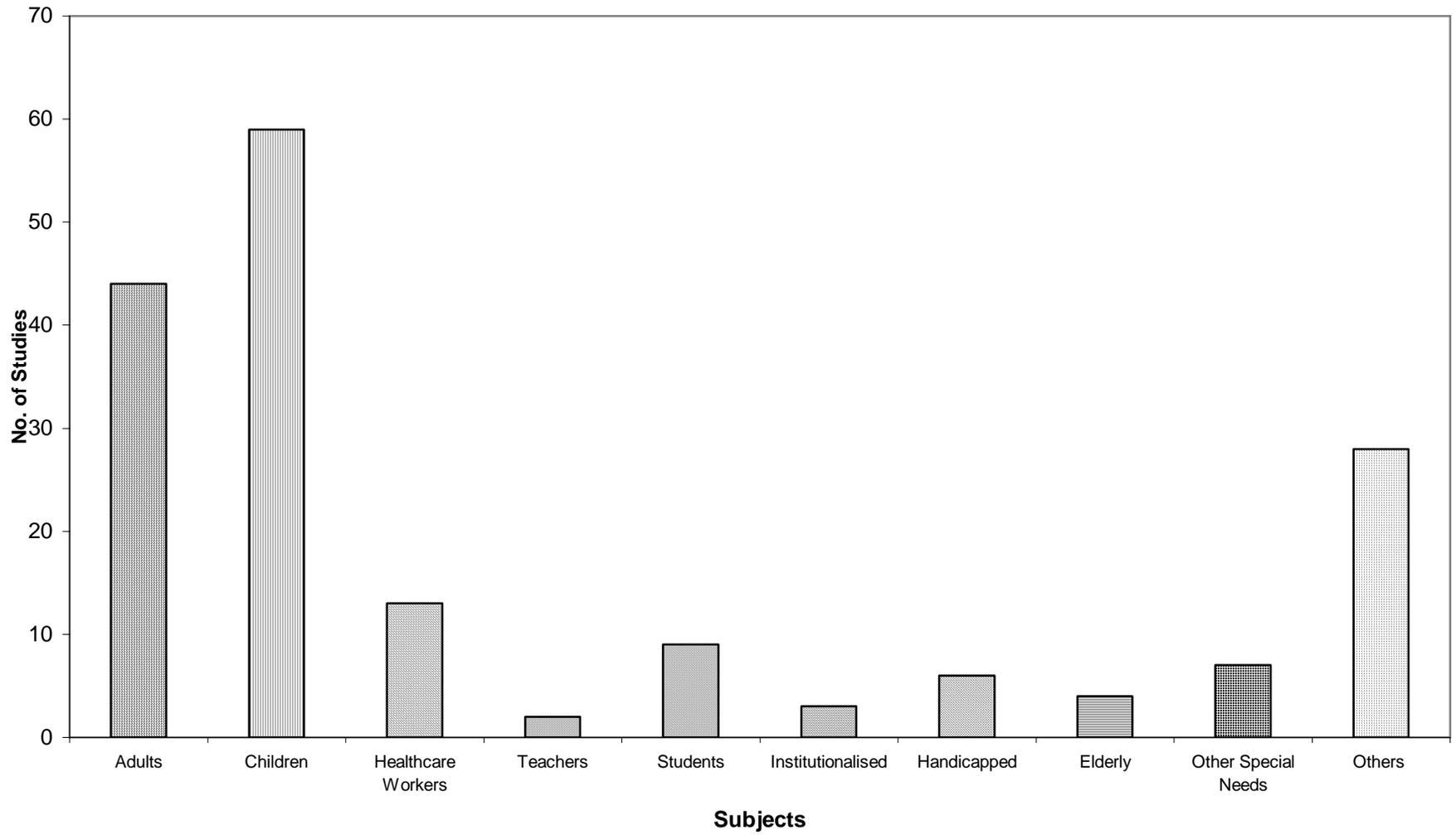
The following studies of children's oral health, since 1994, have been identified and reviewed: the Southern Health Board (1995), the Mid-Western Health Board (1997), the Eastern Health Board (1994), the Western Health Board (1994) and the North Eastern Health Board (1995). In respect of the first oral health goal, only the reports from the North Eastern and Western Health Boards presented data in a comparable way. Here, the percentages of caries free 5-year-old children in fluoridated and non-fluoridated areas respectively were 62 per cent and 45 per cent for the North Eastern Health Board and 68 per cent and 42 per cent for the Western Health Board.

In the fluoridated 12-year-old age group, the goal of DMF less than one had not been achieved. The DMF in the Southern Health Board was 1.3, in the Mid-Western Health Board the DMF was 1.4, in the Western Health Board the DMF was 1.6 and in the North Eastern Health Board the DMF was 1.2.

Within the non-fluoridated groups, the goal was achieved in the North Eastern Health Board and the Southern Health Board, with DMFs of 1.6 and 1.8 respectively. In the Mid Western and Western Health Boards, the DMF was slightly higher than the target at 2.1. The results of the Eastern Health Board survey were not presented according to fluoridation status.

**Figure 1. The Number of Studies in Each Research Area**

**Figure 2. Category of Research and Number of Studies in Each Category**

**Figure 3. Subject Category and Number of Studies Involving Each Category**

## References and Comments

The studies identified are listed below together with any findings and author's conclusions drawn from the research. Any listed recommendations have been made by the authors of this report.

Aherne, O'Mullane and Barrett (1990): Indices of root surface caries. *Journal of Dental Research*. 69 1222-1226

### **Findings**

The wide variation in levels of root caries recorded among different populations could be due to differences in the diagnostic method as well as to inherent differences in the prevalence of the condition.

### **Conclusion**

An attempt be made to reach a global consensus on the method of diagnosing root caries.

Algali, Fenton and Convery (1996): Reimplantation of traumatically avulsed permanent incisors in children attending Dublin Dental Hospital. *Journal of Dental Research* 75 1242

### **Findings**

None of the teeth replanted within 30 minutes were lost.

The extra-alveolar period for 13 of the 15 teeth that failed was more than one hour. Storage media and the time at which the root canal treatment was commenced approached statistical significance.

Al-Khateeb, O'Mullane and Whelton (1990): Comparison of the need for periodontal care amongst 15 year old children in Ireland and Saudi Arabia as assessed by CPITN. *Community Dentistry and Oral Epidemiology* 18 55

### **Findings**

Of the Irish children, 43% were regarded as healthy, 21% had bleeding on probing and 35% had calculus.

The corresponding figures for the Saudi Arabian children were similar.

Pocketing was rare for both groups. However, the number of sextant affected per child by bleeding and calculus was considerably higher in Saudi Arabia.

Alonso, Barry and Toner (1996): The relative frequency of odontogenic cysts in the Dublin Dental Hospital (1968-1993). *Journal of Dental Research* 75 1242

### **Findings**

342 cysts were recovered.

The overall frequency was inflammatory dental cysts - 79%, dentigerous cysts - 12.6% and odontogenic keratocysts - 8.4%.

Amer, Omer, Kelly and Claffey (1996): The operative response of GDPs to different extents of carious lesions. *Journal of Dental Research* 75 1240

Amer, Omer, Bergquist and Elderton (1998): Investigation of the operative response of a group of general dental practitioners to varying extents of proximal caries. *European Journal of Dental Education* 2 265-68

**Findings**

The type of cavity preparation had a significant effect on the volume of tooth material removed for all three extents of caries.

Time since qualification had a significant effect on the amount of tooth material removed for the least extent of caries but not for the other categories of carious involvement.

**Conclusion**

It would seem that more recently graduating dentists were more conservative in the amount of tooth substance they remove in all extents of caries.

Therefore renewed efforts should be made in the effective delivery of continuing education courses in newer concepts of caries management.

Attwood, Blinkhorn, O'Hickey and Gavin (1992): Comparison of dental health in children in Dublin and Glasgow. *Journal of Dental Research* 71 542

**Findings**

The mean DMFT was 45% lower in fluoridated Dublin compared with unfluoridated Glasgow.

**Conclusion**

Fluoridation of public water supplies in Greater Glasgow should be undertaken.

Attwood, Blinkhorn, O'Hickey and Gavin (1992): Incidence of enamel defects of children resident in Dublin. *Journal of Dental Research* 71 543

**Findings**

Sixty-two per cent of the children had no enamel defects.

Twenty-nine per cent had at least one demarcated opacity.

Seventeen per cent had diffuse opacities.

The majority of enamel defects affected less than one third of the tooth surface.

**Conclusion**

The majority of enamel defects were demarcated opacities (61%).

Only 20% were diffuse opacities, likely to be due to fluorosis.

Water fluoridation in Dublin is a minor cause of enamel defects in 12-year-olds.

Barry, Sleeman, Ryan and Allen (1996): Oral surgery at St Mary's Hospital, Chapelizod. *Journal of the Irish Dental Association* 42 9-12

**Findings**

Increased utilisation of day-case services, supported by increased usage of sedation with local anaesthesia, reduces reliance on expensive in-patient facilities.

Beirne, Brady and Dhaif (1995): Current treatment of mandibular fractures - an overview. *Journal of the Irish Dental Association* 41 30-31

**Conclusion**

The use of rigid internal fixation of mandibular fractures proffers a number of advantages when compared with intermaxillary fixation.

Beirne, Barry, Brady and Morris (1996): Donor site morbidity of the anterior iliac crest following cancellous bone harvest. *International Journal of Oral and Maxillofacial Surgery* 25 268-271

**Findings**

The anterior iliac crest provides an adequate harvest of cancellous bone chips for grafting into the cleft alveolus.

The results show a low incidence of donor site morbidity.

Bell, O'Mullane and Whelton (1992): DMF of fourth year medical and dental students 1984-1991. *Journal of Dental Research* 71 544

**Findings**

There was little difference in the DMFT of medical and dental students.

There was a substantial reduction in caries levels for both medical and dental students over the period.

Blake and Bibby (1998): Retention and stability-a review of the literature. *American Journal of Orthodontics and Dento-facial Orthoptics* 114 299-306

**Conclusions**

The patient's pre-treatment lower arch form should be maintained during orthodontic treatment as much as possible.

Original lower inter-canine width should be maintained as much as possible because expansion is the most predictable of all orthodontic relapses.

The most stable position of lower incisors is the pre-treatment position.

Fiberotomy is an effective means of reducing rotational relapse.

Blake, Dowling, Garvey and McNamara (1998): A profile of orthodontic referrals. *Journal of Dental Research* 77 1285

Blake, Garvey, Bray and McKiernan (1998): An audit of the orthognathic surgical procedures carried out in the national maxillofacial unit over a 5-year period. *Journal of the Irish Dental Association* 44 3-6

**Findings**

The demand for orthognathic correction of skeletal disharmonies increased steadily over the period 1991 to 1995.

A medical condition played a significant role in the aetiology of the presenting skeletal disharmony in 16% of cases.

Blake, McKiernan, Garvey and Brady (1998): Audit of orthognathic surgery. *Journal of Dental Research* 77 1285

Blinkhorn, Attwood, Gavin and O'Hickey (1992): Joint epidemiological survey on dental health of 12-year-old schoolchildren in Dublin and Glasgow. *Community Dentistry and Oral Epidemiology* 20 307

**Findings**

On average, the mean DMFT scores were 45% lower in Dublin than Glasgow.

**Conclusion**

As the city has just one major source of public drinking supply and a high level of caries, fluoridation of the public water supply in Glasgow is indicated.

Boyle, Mussalam, Ashmore, Baxter, Cadden et al. (1998): A nutritional investigation in 11-12 year olds. *Journal of Dental Research* 77 1289

**Findings**

School children in a higher socio-economic group respond better to the main educational message to decrease the frequency of sugar intake in their diet.

**Conclusions**

The targeting of educational schemes to problematic groups that would benefit the most from them.

Keep the educational message simple.

Bradley (1998): Oral health of Irish travellers. MSc thesis, King's College London

**Findings**

The Travellers had low levels of knowledge about dental health and dental services. They had little experience of asymptomatic dental attendance.

**Conclusions**

The targeting of resources to this special needs group.

Increasing access to services.

Political and public support to reduce social and therefore health inequalities.

Brightman (1997): A localised oral health survey based on the school dental inspection and its implication for the proposed national oral health database. *Journal of the Irish Dental Association* 43 2-6

Buckley (1993): A comparison of the attitudes of dentists and the public to periodontal health in Ireland. *International Dental Journal* 43 161-166

**Findings**

The public had a far greater awareness of periodontal disease than the dentists had perceived.

Seventy-five per cent were aware that bleeding gums was a serious condition.

The public awareness of bleeding gums was low, only 8% said that their gums bled regularly and 54% said they never had a problem.

Buckley (1994): Periodontal disease in an Irish dental practice. *Journal of Dental Research* 73 879

**Findings**

Bleeding on probing was most prevalent in young adults.

Calculus was widespread in all adult groups.

Periodontal pocketing was present in over 50% of all patients examined.

Only 5% of patient had completely healthy mouths.

**Conclusion**

There is a continuing need to increase public awareness of periodontal disease.

Buckley and Crowley (1993): The continuing dental education (CDE) activities of a regional cohort of Irish dentists - baseline study. *Journal of the Irish Dental Association* 39 54-59

**Findings**

Forty-one per cent of respondents belonged to more than one professional association while 55% subscribed to more than one journal.

The Irish dental Association and its journal were the most popular.

There was a general low level of involvement in elements of CDE, such as attendances at scientific conferences, professional courses and occasional meetings.

Dentists who belonged to a number of organisations and subscribed to various journals also tended to be the most frequent attenders at relevant courses, conferences and meetings.

With some exceptions, specialists and hospital-based dentists were more likely to be involved in CDE activities.

Buckley and Gloster (1998): An evaluation of 8 years of continuing dental education in the South of Ireland. *Journal of Dental Research* 77 791

**Findings**

Lectures/seminars comprised 85% of the courses and practical hands-on courses comprised 15%.

Ninety-two per cent of respondents had attended at least one course and more than 65% had attended more than three courses.

There was a high satisfaction rate but respondents requested more practical courses and more courses delivered locally.

This will have implications for future planning.

Buckley, Zaida and McElhinney (1998): Comparison of a periodontal screening method with full periodontal examination. *Journal of Dental Research* 77 1285

Buckley, Hannigan and Jones (2000): Evaluation of periodontal examination methods for patients with cardiovascular disease. *Journal of Dental Research* 79 1228

Burden, McGuinness and McNamara (1998): Treatment outcome for a sample of patients with class II division 1 malocclusion treated at a regional hospital orthodontic department. *Journal of the Irish Dental Association* 44 67

**Findings**

Treatment for this type of malocclusion was highly effective with very few patients failing to benefit from orthodontic treatment.

**Conclusion**

The PAR index provides an easily applied and objective method of assessing orthodontic treatment outcomes.

Burke and Lynch (1998): Sealant shear bond strength to sound and carious radicular dentine. *Journal of Dental Research* 77 637

**Findings**

Optiguard in combination with OptibondFL Prime and Optibond adhesive had the highest bond strength and this was not influenced by the caries status of the root surface.

Burke and McConnell (2000): State funded extractions and endodontic treatment in Ireland in 1997. *Journal of Dental Research* 79 1230

**Findings**

A significantly lower percentage of extractions was carried out under the Dental Benefits Scheme in 1997 and a significantly greater percentage of endodontic treatment was carried out under the NHS in 1997 than under the Dental Treatment Services Scheme.

Christie, Claffey and Renvert (1998): 0.2% chlorhexidine in the treatment of periodontitis patients with poor mechanical plaque control. *Journal of Dental Research* 77 1288

Christie, Claffey, Renvert (1998): The use of 0.2% chlorhexidine in the absence of a structured mechanical regime of oral hygiene following non-surgical treatment of periodontitis. *Journal of Clinical Periodontitis* 25 15-23

**Findings**

Plaque indices showed no improvement from baseline scores.

The mean bleeding score was reduced.

There was an overall reduction in mean pocket depth.

**Conclusion**

Chlorhexidine may have both qualitative and quantitative effects on plaque deposits formed in its presence.

Chlorhexidine can be used as an adjunct to inadequate mechanical oral hygiene over an observation period of one year.

Claffey, Nylund, Wikes, Gantes, Martin, Loos and Egelberg (1991): Relative effects of therapy and periodontitis on loss of attachment after root debridement -2y follow up. *Journal of Dental Research* 70 777

Claffey, Nylund, Flint, Olsson, Mover, Kulstad and Kelty (1997): The effect of 0.1% and 0.25 Demopinol mouthwash on gingivitis and plaque levels in a phase 3 double blind trial. *Journal of Dental Research* 76 1155

**Findings**

Demopinol 0.2% was superior to a placebo in the treatment of gingivitis.

Clarke (2000): Social inequalities in dental caries experienced by children in the Eastern Health Board Region 1993. MSc thesis, Cork.

**Conclusion**

The socio-economic level of the area should influence allocation of resources.

Clarkson (1992): A European view of fluoride supplementation. *British Dental Journal* 172 357

**Conclusions**

Fluoride supplements have no application as a public health measure.

A dose of 0.5-mg/day fluoride should be prescribed for at risk individuals from the age of three years.

Labelling should advise that fluoride supplements should not be used before 3 years of age unless prescribed by a dentist.

Clarkson and O'Mullane (1983): Edentulousness in the United Kingdom and Ireland. *Community Dentistry and Oral Epidemiology* 11 317-20

**Findings**

The percentage of edentulous adults was lowest in Ireland at 26% and highest in Scotland at 39%.

Females had a higher level of edentulousness than males.

The percentage of dentate adults who found the thought of having full dentures as very upsetting was highest in Ireland at 59%.

Attendance at a dentist for regular check-ups was considerably lower among dentate adults in Ireland.

Clarkson and O'Mullane (1992): Prevalence of enamel defects/fluorosis in fluoridated and non-fluoridated areas in Ireland. *Community Dentistry and Oral Epidemiology* 20 196-199

**Findings**

Over 94% of the children examined in all areas were regarded as having normal enamel as defined by Dean's index, the remainder showing evidence of questionable, very mild or mild fluorosis.

Between 52% and 63% of the children had one or more teeth affected by enamel defects when measured by the DDE index.

The prevalence of enamel defects was similar in children living in fluoridated and non-fluoridated areas but the prevalence of diffuse opacities was higher in the fluoridated areas.

Between 20 and 23% of parents and children actually noticed defects when there were none clinically present.

Cochran, O'Mullane and Phillips (2000): Measurement of diffuse enamel opacities in 8-year-old Cork city residents. *Journal of Dental Research* 79 1228

**Findings**

When wet, 45% of teeth examined clinically had diffuse enamel opacities.

When slides of teeth photographed when wet were examined, 58% were observed with diffuse opacities.

When the slides of teeth photographed when dry were examined, 87% had diffuse opacities.

**Conclusion**

Enamel dehydration should be standardised when conducting epidemiological studies of enamel fluorosis.

**Recommendation**

There is a need for rigid training prior to undertaking such surveys.

Costelloe (1986): Survey of mentally and physically handicapped children and adult's dental health for Galway Community Care Area of the Western Health Board. Report, Western Health Board

Costelloe (1990): Dental health status of mentally and physically handicapped adults and children in Galway community area of the Western Health Board. *Journal of the Irish Dental Association* 36 99-101

**Findings**

Ninety-nine per cent had a need for periodontal intervention and 13% had pocket depths of more than 6mm.

Twenty-one per cent were in need of a denture.

Only 0.7% had fissure sealants.

Seventy-six per cent had untreated caries amongst the 4-6 years age group and 29% had untreated caries in the 11-13 years age group.

Extractions had been the treatment of choice i.e. the M component accounted for 91% of the DMFT after 35 years of age.

**Conclusion**

There is a pressing need for preventive dental service for the handicapped.

Creedon and O'Mullane (2000): Caries levels amongst 5-year-old children in County Kerry. *Journal of Dental Research* 79 1227

**Findings**

There was a wide variation in caries levels within Co. Kerry ranging from a dmft of 0.7 in Tralee, which has a fluoridated water supply to 3.0 in Caherciveen/Kenmare, which has a non-fluoridated water supply.

Caries levels were related to oral hygiene practices, dietary practices and parental possession of a medical card.

Dalton and Kirrane (1998): Public perception of mercury in amalgam - an attitudinal survey. *Journal of Dental Research* 77 1289

**Findings**

Ninety-two per cent of the respondents considered mercury to be a danger to health.

Thirty-five per cent of this subgroup knew mercury was in amalgam with 51% of the subgroup expressing concern about the presence of the mercury in amalgam.

Of the 65% who did not know mercury was in amalgam, 49% became concerned when informed of the facts.

**Conclusion**

A programme of education for the public may be warranted to establish the scientific facts and prevent any unnecessary removal of existing amalgam restorations.

Daly F (1998): Oral health needs assessment of residents in an elderly institution. MSc thesis, Kings College London.

**Findings**

Seventy-two per cent of the residents were edentulous, of which 78% had no artificial teeth.

Of all residents, 61% were in need of treatment.

Oral hygiene was very poor.

Demand for oral care was low.

Daly, McDermott and McNamara (1990): Reducing sugar consumption - pie in the sky?  
Journal of Dental Research 69 1027

Dowling, Fitzpatrick, Garvey and McNamara (1997): Eastern Health Board regional orthodontic service- an initial audit. Journal of the Irish Dental Association 43 107-109

**Findings**

Within the sample studied, 65% were prioritised for orthodontic care.

Fort-seven per cent were in need of restorative care.

**Conclusion**

Closer links need to be establishment between orthodontic consultants and GDPs/community dentists to resolve the need for routine care of referred orthodontic patients.

Eastern Health Board (1994): Children's dental health in the Eastern Health Board region, 1993. Report, Eastern Health Board and University College Cork

Eastern Health Board (1997): Eastern Health Board survey of children's dental health 1997. Report, Eastern Health Board

Eijkman, O'Mullane, Truin and Van Ginkel (1998): Patient satisfaction with dental care in seven EU countries. Journal of Dental Research 77 888

**Findings**

The results indicated that except for the Spanish, a high percentage of regular attenders in seven EU countries were satisfied with dental services provided under the system.

However, the cost of care under these systems gave cause for dissatisfaction.

Ellwood and O'Mullane (1994): Toothbrushing behaviour in twelve-year-old children and dental enamel opacities. Journal of the Irish Dental Association 40 12-15

**Findings**

Children who brushed more frequently were at greater risk of having diffuse types of enamel opacity present,

**Conclusion**

Further studies to investigate the effect of fluoride ingestion from toothpastes are required.

Ellwood and O'Mullane (1995): Dental enamel opacities in three groups with varying levels of fluoride in their drinking water. Caries Research 29 137-142

**Findings**

The overall prevalence of enamel defects was similar in all 3 groups.

The prevalence of demarcated opacities was highest in the group with the lowest level of fluoride in the drinking water.

The prevalence of hypomineralised enamel defects increased with increasing levels of fluoride in the drinking water.

Associations between both the frequency of toothbrushing and the age toothbrushing was commenced and hypomineralised enamel defects were identified.

**Conclusions**

As many children are now receiving fluoride from more than one source, there is a need to continue monitoring levels of enamel hypomineralisation.

Ellwood and O'Mullane (1996): Association between developmental enamel defects and caries in populations with and without fluoride in their drinking water. *Journal of public Health Dentistry* 56 76-80

**Findings**

Subjects with one or more demarcated opacities had more dental caries than those without these opacities present.

Children with enamel defects scored with the TF index tended to have less dental caries those without these defects present.

**Conclusions**

Developmental defects of enamel may be useful markers of caries susceptibility, which should be considered in the risk-benefit assessment for the use of fluoride.

Further studies are required to clarify the relationship between developmental enamel opacities and dental caries and the reasons for any associations.

Fenlon and McCartan (1990): Comparison of accuracy of medical health questionnaires and verbal interviews in a primary care practice. *Journal of Dental Research* 69 1027

**Findings**

In 4% of cases, the questionnaire failed to reveal some aspect of health significant to dental practice.

Fenlon and McCartan (1991): Medical status of patients attending a primary care dental practice in Ireland. *Journal of the Irish Dental Association* 37 75-77

**Findings**

Relevant medical histories affecting the practices of dentistry were found in 28% of patients.

There was a marked increase in prevalence with increasing age.

Many more women than men were affected.

**Conclusions**

It is essential that all dentists establish the health status of their patients.

The dentist must be in a position to assess the impact of any medical risks or know where to obtain relevant information.

Field and McNamara (1998): Irish orthodontic referrals - dental awareness. *Journal of Dental Research* 77 1285

**Findings**

Dental caries was detected in 27% of patients.

Forty-two per cent had attended for routine dental care in the past 6 months.

Thirty-four per cent had not attended in the previous 2 years or could not recall when they last attended.

Twenty-nine per cent did not know the purpose of the visit in spite of the details given in the appointment notification.

**Conclusion**

The study revealed a general lack of dental awareness in patients seeking orthodontic treatment.

In view of the risks associated with orthodontic treatment, its provision in these circumstances is questionable.

Galgut and O'Mullane (1998): Statistical analysis of data derived from clinical variables of plaque and gingivitis. *Journal of Clinical Periodontology* 25 549-553

**Conclusions**

It is suggested that disease indicators be used as the unit of assessment rather than aetiological agents.

Clinical trials using gingivitis as the unit of measurement of efficacy should be of longer duration than 3 months. This hypothesis needs to be validated in longer clinical trials.

Galvin, O'Mullane and Whelton (1992): Level of tooth loss according to socio-economic status. *Journal of Dental Research* 71 544

**Findings**

Tooth loss was found to be associated with irregular dental attendance, low educational status, low social class and infrequent tooth brushing.

**Conclusion**

Factors other than disease are an important determinant in levels of tooth loss.

Gleeson, O'Mullane and Whelton (1992): Oral health of adults with varying levels of general health. *Journal of Dental Research* 71 544

**Findings**

Tooth loss tends to be higher in subjects with poorer general health.

Goggin, O'Mullane and Whelton (1991): The effectiveness of a combined fluoride mouthrinse and fissure sealant programme. *Journal of the Irish Dental Association* 37 38-40

**Findings**

The programme was found to significantly reduce the incidence of dental caries over a two year period.

The cost of the programme was high when compared with fluoridation of water supplies.

**Conclusions**

Similar programmes should be co-ordinated throughout Ireland.

The contribution of a fluoride mouthwashing strategy to overall effectiveness should receive special attention.

Graham, O'Connor and Holland (1998): Audit of 100 patients with dental trauma. *Journal of Dental Research* 77 1290

**Findings**

Falls accounted for 40% of injuries, bicycle accidents 22%, sports related 22%, assaults 7%, road traffic accidents 4% and other causes 5%.

Over half the patients were aged 6-11 years.

**Conclusions**

Dental trauma mainly affects young male children, most often between July-September. Most injuries occurred during normal daily activities so that the scope for prevention is very limited.

Graham, Whelton and O'Mullane (1998): Study of the oral health of school children of the Irish traveller community. *Journal of Dental Research* 77 707

**Findings**

When compared with other dental surveys on schoolchildren of the general population, the results show that Irish Traveller schoolchildren have poorer oral health.

Recommendation

Preventive programmes should be targeted at Traveller children and their families

Grennan and Donegan (1992): Primary school teachers and dental health education. *Journal of Dental Research* 71 1026

**Findings**

Only 17% of respondents received some form of undergraduate training in dental health. Eighty per cent of schools are making an effort to teach dental health although only 47% of teachers deemed themselves competent to teach it.

The vast majority of teachers considered the class room an appropriate environment to convey dental health messages to children.

Hannigan (1996): Survival analysis - an alternative approach to analysing data in clinical trials. *Journal of Dental Research* 75 1242

Hannigan, O'Mullane and Barry (1997): An investigation of within subject caries distribution patterns. *Journal of Dental Research* 76 1158

**Findings**

Thirty-four per cent of decayed surfaces were symmetrical and 41% were clustered (adjoining surfaces on the same side of the mouth).

**Conclusions**

Caries patterns are not random and a clustered pattern seems most likely.

Such a pattern may support the idea of caries as an infectious disease or may be due to genetic and/or environmental factors.

Hannigan, O'Mullane and Barry (1998): Caries experience of tooth surfaces in a 3-year caries clinical trial. *Journal of Dental Research* 77 1289

**Findings**

The occlusal surfaces of the first and second molars experienced the most decay during the trial accounting for one third of all decayed surfaces.

Harrington and Judge (1997): Profile of career choices of Dublin dental science graduates of 1985 and 1990. *Journal of Dental Research* 76 1158

Harrison, Johnston, McLoughlin, O'Connor et al. (1997): Oral health of Cork and Dublin Medical and Dental students. *Journal of Dental Research* 76 1154

**Findings**

In 1986, the DMFT for dental students was 10.6 and the DMFT of medical students was 11.1. In 1996, it was 5.9 for both groups.

CPITN scores indicate that the prevalence of calculus in 1996 was 16% amongst Cork Dental students and 32% amongst Cork Medical students. The figures for Dublin Dental and Medical students were 33% and 30% respectively.

### **Conclusions**

There are few differences in the oral health levels amongst Medical and Dental and Cork and Dublin students.

The level of dental caries in this group has declined dramatically.

Hayden and O'Mullane (1997): The dental health status of members of the defence forces in Ireland. *Journal of Dental Research* 76 1158

Healy, Whelton, Fitzgerald and O'Mullane (1994): Antimicrobial compounds from oral bacteria. *Journal of Dental Research* 73 876

### **Findings**

Oral bacteria, isolated from human plaque and saliva represent a source of potent inhibitory agents active on mutans streptococci. These inhibitors may have potential as anticaries agents.

Hewson, Murray and McNamara (1997): Galway cleft lip and palate children 1980-1995-epidemiology. *Journal of Dental Research* 76 1156

### **Conclusion**

The large number of surgeons involved, the small number of early referrals for dental care and the high DMF amongst this small group reflects the need for better intra and inter disciplinary communication and co-operation.

Hewson, McKiernan, Newson, Butler, McNamara, Moran and Garvey (1995): A study of cleft lip and palate children in Mayo. *Journal of Dental Research* 74 950

Holland and O'Mullane (1990): The organisation of dental care for groups of mentally handicapped persons. *Community Dental Health* 7 285-293

### **Findings**

A high proportion of dental caries remained untreated.

Most treatment provided consisted of extractions.

Most treatment requirements were met by non-consultant personnel.

Continuing care, particularly for periodontal disease remained a problem.

### **Conclusions**

It is feasible to set up an effective dental service for mentally handicapped groups.

Improvements in the treatment of dental caries can be achieved within a relatively short period of time.

Most treatment requirements can be met by non-consultant personnel.

Holland, O'Mullane and Whelton (1994): Accidental damage to incisors amongst Irish adults. *Journal of Dental Research* 73 877

### **Findings**

Adult males have a higher prevalence of dental trauma than adult females.

Fractures involving dentine are more common in younger adults whilst loss of incisors is more common in older adults.

Trauma involving lower incisors is rare.

Holland, O'Mullane and Whelton (1994): Accidental damage to incisors amongst Irish adults. *Endodontics and Dental Traumatology* 10 191-194

**Findings**

Fifteen per cent of the population were affected.

There was a continuing increase in prevalence with age which levelled out after the age of 24 years.

A high level of untreated injuries was noted.

**Conclusion**

A more aggressive approach to prevention in the form of upper arch mouth guards could make a important contribution to lowering overall prevalence.

Holland, O'Mullane, Whelton, Murphy and Creedon (1995): The prevalence of enamel opacities in fluoridated and non-fluoridated communities in Ireland. *Journal of Dental Research* 74 950

**Findings**

For 12-year-olds in the non-fluoridated area, 18% had diffuse opacities compared with 42% in the fluoridated area.

At 16 years, 18% in the non-fluoridated area had diffuse opacities compared with 27% in the fluoridated area.

**Conclusion**

The prevalence of diffuse opacities tends to be higher in fluoridated communities.

Holland, Whelton, O'Mullane and Creedon (1995): Evaluation of a fortnightly school based sodium fluoride mouthrinse 4 years following cessation . *Caries Research* 29 431-434

**Findings**

On cessation of the programme at age 12, participating children had a significantly lower mean DMFT compared with children who had not participated in the mouthrinse.

At age 12, mean DMFT for the mouthrinse group was the same as for children living in a fluoridated community.

The caries levels 4 years after cessation of the rinse for both groups was similar and was considerably higher than the levels recorded for children living in the fluoridated community.

In both age groups, almost all caries occurred on molar teeth and was found mainly on pit and fissure surfaces of these teeth.

**Conclusions**

The cessation of programmes at 12 years of age should be reappraised.

The combination of a school based mouthrinsing programme with a fissure sealing programme is recommended.

Holland, Lucey, Flemming, Kavanagh and O'Mullane (1996): Costs in providing dental treatment for severely handicapped patients. *Journal of Dental Research* 75 1241

Holland, Lucey, Kavanagh and O'Mullane (1997): Costs in providing dental treatment for severely handicapped patients under general anaesthesia. *Journal of the Irish Dental Association* 43 72-75

**Conclusions**

The cost of providing dental treatment for handicapped patients was found to be relatively high at IR£613 per case.

The full potential of primary care services for handicapped patients should be developed, including prevention, in order to reduce the use of the necessary but expensive secondary care facilities.

Such facilities should be shared with other services to reduce overall costs.

Jones (1992): Dental epidemiological survey of 5-year-old schoolchildren in Kerry 1992. Southern Health Board Report, Southern Health Board

**Conclusions**

Redistribution of dentists to provide a more equitable service.

Curtailement of general anaesthetic provision for extractions.

Extension of water fluoridation or, if not possible, fluoride mouthwashing at school.

Policy of restoring carious teeth in the under sixes.

Planned and organised oral health promotion.

Oral health education certificate for nurses with hygienist acting as team leader.

A survey of 5-year-olds should be undertaken every four years.

Jones (1994): Epidemiological study of 5-year-old school children in County Kerry 1992. *Journal of Dental Research* 73 876

**Findings**

There was statistical evidence that the fluoridated group had experienced less caries than the non-fluoridated group.

**Conclusion**

There should be an expansion of health promotion activities in County Kerry.

Jones and O'Mullane (1998): Personal computer use amongst health board dental staff in Ireland. *Journal of Dental Research* 77 1290

Kavanagh, Whelton, O'Mullane and Fitzgerald (1991): Comparison of commercial chair side methods for quantifying *Lactobacillus* and *Streptococcus Mutans* in saliva. *Journal of Dental Research* 70 776

**Findings**

The results do not support the use of the S.M. Mutans kit for estimating levels of *Streptococcus Mutans* in saliva.

The Dentocult kit provided a more reliable estimation of salivary *Lactobacillus* levels.

Keane, O'Mullane and Whelton (1994): An investigation into oral health attitudes and behaviour among edentulous Irish adults. *Journal of Dental Research* 73 876

**Findings**

Ten per cent of Irish adults did not possess a full set of dentures.

Forty-two per cent were dissatisfied with the appearance and 45% were dissatisfied with the comfort/fit of their dentures.

Dissatisfaction was higher among medical card holders.

Keane, Foley, Crowley and McNamara (1998): Molar status of recently referred orthodontic patients. *Journal of Dental Research* 77 1285

Kearns, McCartan and Lamey (1998): Perceptions of pain following minor oral mucosal surgical procedures. *Journal of Dental Research* 77 1288

Kearns, Burke and McCartan (1998): Patient attitude to glove use by dentists. *British Dental Journal* 185 87-89

### **Findings**

Ninety-four per cent of patients considered that dentists should routinely wear gloves.

Ninety-five per cent considered that gloves were worn to protect both the dentist and the patient.

Seventy-two per cent of patients would not attend a dentist who did not wear gloves.

Kelleher, Lamas, McCartan and Ormsby (1993): Age standardised incidence rates of lip, tongue and mouth cancers in 3 regions of Ireland 1984-1988. *Journal of the Irish Dental Association* 39 122-124

### **Findings**

The incidence of lip cancer is four times higher in the North West Health Board region compared to Denmark.

Kelly, Collins, Craven and Flemming (1993): Care provided by a dental hygienist and dental health educator in a children's hospital. *Journal of the Irish Dental Association* 39 76-77

Kirrane, Egan, Gallagher, Ahmed, Hayes et al (1998): An assessment of a preventive strategy at work in the community. *Journal of Dental Research* 77 1289

### **Findings**

Except for knowledge related to toothbrushing at primary school level, no significant difference was found between the groups' level of dental knowledge.

### **Conclusion**

In the absence of more intensive and frequent evaluations, such health education systems should remain an integral component of the National Health Strategy.

Lee (19): An evaluation of the issues raised by the dental treatment services scheme. Report, Midland Health Board

### **Conclusions**

Presentation of data to allow budgetary monitoring by the Health Board.

Presentation of data to allow Health Board to monitor activity.

General monitoring for probity.

Formation of a disciplinary protocol.

Evaluation measures of the effect of the DTSS on dental health.

Time limit on payment forms to reduce outstanding payments to aid budget control.  
Payment method investigation with consideration to the introduction of a capitation system.

Lemasney, Holland, O'Brien and O'Mullane (1990): The effects of antimalignancy therapy as seen in the oral cavity of children and young adults - a review. *Journal of the Irish Dental Association* 36 47-51

**Conclusion**

Preventive treatment is the essence of good management for all such patients and all available measures should be initiated as soon as possible after diagnosis.

Lynch and Burke (2000): The outcome of primary endodontic therapy in Cork dental hospital. *Journal of Dental Research* 79 1230

**Findings**

After primary endodontic treatment, 52% of people did not return for further treatment.

MacCarthy and Shanley (1991): Use of a biodegradable controlled releasing substance in the treatment of periodontal disease. *Journal of Dental Research* 70 777

MacCarthy, Shanley, Collins and Deasy (1992): Use of a biodegradable controlled releasing substance in the treatment of periodontal disease. *Journal of Dental Research* 71 1025

MacCarthy, Nylund, Glass, Cullen, Delaney and Slattery (1994): Dental health status and awareness amongst a group of university students. *Journal of Dental Research* 73 878

**Findings**

The mean frequency of toothbrushing was twice a day.

Both the dental and medical groups had similar knowledge regarding diet and dental caries.

**Conclusions**

The level of dental health knowledge in the groups was inconsistent, indicating a need for dental health education.

The oral hygiene was moderately good, but there was room for improvement.

MacCarthy and McCartan (1996): Anti-plaque mouthwashes - Efficacy and modes of action. *Journal of the Irish Dental Association* 42 3-5

**Conclusion**

Mechanical control of bacterial dental plaque is the preferred method for daily long term use in the home.

When mechanical control is not possible to achieve, the use of chemical agents for the control of dental plaque may be justified, due consideration being given to their effectiveness, safety and cost.

MacCarthy and McCartan (1996): Anti-plaque mouthwashes - side effects and potential health hazards. *Journal of the Irish Dental Association* 42 6-7

**Findings**

Most mouthwashes would not be regarded as significantly harmful in any other way than high ethanol content and low pH.

It may be best to use only those mouthwashes with low alcohol content, from reputable research companies with a strong research input and those containing fluoride and proven anti-plaque agents.

Dentists recommending mouthwashes to patients would be advised to recommend only those with known formulation and safety record.

MacCarthy, Moriarty and Waldron (1998): Use of prilocarpine HCl in patients with post-radiation xerostomia-report of a pilot study. *Journal of Dental Research* 77 979

McCarthy and Nylund (1998): Dental anxiety in a group of University students. *Journal of Dental Research* 77 1289

#### **Findings**

Forty-nine per cent of the study group indicated mild to moderate levels of dental anxiety.

#### **Conclusion**

Healthcare professionals should have a positive attitude about all aspects of healthcare and guide their patients towards dental health.

MacCarthy, Moriarty and Waldron (2000): Baseline dental status of post head and neck radiation patients. *Journal of Dental Research* 79 1229

MacCullogh (1998): Smart method of dispensing artificial teeth. *Journal of Dental Research* 77 1286

MacNeil (1990): Regional variation in dental caries levels in Irish children. *Journal of the Irish Dental Association* 36 143-145

#### **Findings**

A significant negative correlation was found between percentage of carboniferous stone and the prevalence of decayed, missing or filled teeth.

McAleer and Dalton (1998): A comparison of children's oral health status in dissimilar socio-economic groups. *Journal of Dental Research* 77 1289

#### **Findings**

The mean DMFT was 1.3 for the lower socio-economic group and 0.9 for the higher socio-economic group.

Forty-eight per cent of the lower socio-economic group had a maximum CPITN score of healthy compared with 76% in the higher group.

Fourteen per cent of the lower socio-economic group had fissure sealants present in contrast to 52% of the higher socio-economic group.

#### **Conclusion**

Taking into account the limitations of the restricted sample size in the study, the results may reflect differences in knowledge, attitude and behaviour between these two socio-economic groups. These differences may influence service uptake.

McCabe (1995): Amalgam crown restorations for posterior endodontically treated teeth. *Journal of the Irish Dental Association* 41 15-17

McCartan and Samaranayke (1991): Oral care of HIV infected patients; the knowledge and attitude of Irish dentists. *Journal of the Irish Dental Association* 37 41-43

**Findings**

Eighty per cent of respondents stated that dentists with special training should treat HIV infected patients.

Most respondents correctly identified the oral manifestations of HIV infection.

**Conclusion**

Further educational efforts on HIV infection and its implications in dentistry should be directed towards dentists in Ireland.

McCartan, Sadlier and O'Mullane (1993): Smoking habits and attitudes of Irish dentists and dental students. *Journal of the Irish Dental Association* 39 26-29

**Findings**

Fourteen per cent of dentists were smokers and 45% were ex-smokers.

Twenty per cent of students were smokers and 15% were ex-smokers.

Most smokers declared an intention of ceasing.

Almost all dentists were aware of the links between smoking and oral cancer.

There was strong support from dentists for higher taxes on tobacco and stricter control of advertising and sponsorship.

**Conclusions**

Irish dental students were more likely to smoke than Irish dentists were but less likely to smoke than the generality of the Irish population.

Dentists are aware of the major risk factors for oral cancer, hold 'progressive' views on public policy on smoking and are prepared to take part in anti-smoking campaigns. This should be taken into account by the planners of such campaigns.

McCartan and Shanley (1995): Policies and practices of European dental schools in relation to smoking- the place of tobacco in the undergraduate dental curriculum. *British Dental Journal* 179 306-308

**Findings**

A majority of responding schools taught the role of smoking in the aetiology of oral cancer.

A majority expected students to take smoking histories from patients.

Half of schools taught anti-smoking advice to students and half expected students to impart such advice to patients.

**Conclusion**

There is scope for considerable improvement in curricula in relation to anti-smoking counselling and in the practices of schools in expecting students to act as tobacco counsellors.

McCartan, Freeman and Harrison (1996): Patterns of attendance and treatment at an emergency dental clinic. *Journal of the Irish Dental Association* 42 27-28

McCreary and McCartan (1999): Clinical management of oral lichen planus. *British Journal of Oral and Maxillofacial Surgery* 37 388-343

McCue, Buckley, Hewson and McNamara (1996): Radiographic study of impacted canines in the Western Health Board. *Journal of Dental Research* 75 1242

**Findings**

Impactions were more common in females than males.

Left-sided canine impaction predominated (42%), with bilateral impactions the next most common group (33%).

15% exhibited changes in the morphology of the adjacent incisors and 3% showed signs of root resorption.

McGrath (1998): Oral cancer prevalence among older people attending Irish dental hospitals. *Journal of Dental Research* 77 1288

**Findings**

Higher levels of cancer were found among men and the edentulous.

Forty-five per cent diagnosed with oral cancer were resident outside Dublin and Cork.

**Conclusion**

Health care planners should ensure that access to specialist services is available for all risk groups and especially for elderly edentulous men resident outside the two major cities.

McGrath, Gilhorne and Bedi (1998): Compounding inequalities in the oral health status of older women living outside Dublin. *Journal of the Irish Dental Association* 44 106-109

**Conclusions**

The findings should be validated using probability sample.

Retarget resources to address the apparent inequalities.

McLoughlin, O'Mullane and Whelton (1998): Dental Caries levels amongst children and adolescents in the North Eastern Health Board. *Journal of Dental Research* 77 1286

**Findings**

There was a substantial reduction in mean DMFT levels since 1984 amongst 8-,12- and 15-year-olds with no change in dmft levels amongst 5-year-olds.

The 1995 data showed a wide variation in caries levels between the three community care areas.

McNamara, Field, Crowley and Fitzpatrick (1998): Eastern Health Board; outcome of orthodontic assessments. *Journal of Dental Research* 77 702

**Findings**

Of the 7,318 patients who presented for treatment, 2,203 were deemed ineligible.

Twenty-two per cent failed their appointment and 62% cancelled appointments.

**Conclusions**

In total, 31% of patients with orthodontic assessment appointments failed or cancelled their appointment.

The significant numbers deemed ineligible for treatment suggests that current orthodontic waiting lists require validation.

**Recommendation**

Protocols for referral should be established.

Mercer(1990): Oral cancer mortality in the Republic of Ireland 1979-1986. Journal of the Irish Dental Association 36 139-142

**Findings**

The annual number of deaths from oral cancer is small and represents a very small proportion of cancer deaths and all deaths.

Males have a greater incidence than females.

Death rates increase with age.

Deaths due to neoplasm of the tongue were the most common.

Age adjusted oral cancer death rates showed no significant change in male or female rates between 1979 and 1986.

**Conclusion**

The time span covered by the study is insufficient to draw definitive conclusion on trends and data over a greater number of years would be required to be conclusive.

Mercer (1991): Oral cancer mortality in the Republic of Ireland 1979-1986. Journal of Dental Research 70 776

Mercer(1992): Dental behaviour, knowledge and symptoms of women attending antenatal classes in Sligo. Journal of Dental Research 71 1025

**Findings**

All the sample reported to brushed their teeth at least once a day.

Fifty-six per cent reported bleeding gums.

Seventy-eight per cent thought brushing with fluoride toothpaste can reduce caries.

Ninety-seven per cent thought sweet snacks harmful to children's teeth.

**Conclusion**

Dental health education input to improve the effectiveness of tooth brushing and to motivate implementation of knowledge on maintaining children's dental health could be of benefit at ante-natal classes.

Mercer (1994): Dental caries in 5 and 12 year olds in counties Sligo and Leitrim in Ireland 1991. Journal of Dental Research 73 876

**Findings**

The mean dmft of 5-year-olds was 1.6 and 52% were caries free.

Eighty-seven per cent of affected teeth were untreated.

In 12-year-olds, the mean DMFT was 1.8 and 35% were caries free.

Sixteen per cent of affected teeth were untreated.

Eighty-seven per cent of affected surfaces were on first permanent molars

**Conclusion**

Levels and prevalence of dental caries were low in both 5 and 12-year-olds.

Murphy, Whelton and O'Mullane (1995): Prevalence of TMJ dysfunction syndrome in Irish adults. Journal of Dental Research 74 952

**Findings**

Only 1% of the subjects assessed reported pain.

Clicking was recorded in 26% of subjects and was more common in females than males.

Murray(1999): Evaluation of a GA service provision in the Midland Health Board dental service. BA project, Midland Health Board

**Conclusions**

The standardisation of forms to facilitate data collection.

The simultaneous referral to hygienist and for general anaesthesia.

Increased use and awareness of sugar free medicines.

Increased interdisciplinary working to promote health and services use.

Mid Western Health Board (1997): Survey of oral health of children and adolescents in the Mid Western Health Board 1997. Mid Western Health Board Report

Nolan (2000): Survey of the oral health status of children and young adolescents with intellectual and physical disability in Galway City and County. MSc thesis, Cork

NEHB (1995): Oral health of children and adolescents in the North Eastern Health Board 1995. NEHB Report

Neville, O'Mullane, Whelton and Murphy (1998): European Oral Healthcare Systems - their structure and oral health outcomes. *Journal of Dental Research* 77 1290

Nylund and MacCarthy (1996): Periodontal status and treatment needs in a group of 1st year medical and dental students. *Journal of Dental Research* 75 1240

**Findings**

Forty-one per cent had bleeding on probing, 28% had calculus deposits and 25% had pocket depths of 3.5 to 5.5mm.

Of the sextants examined, 95% required periodontal therapy at some level.

**Conclusions**

There is a need for health education programmes to create awareness among young individuals of the need for early diagnosis of periodontal disease.

There is a need to create awareness amongst health care professionals of the development of periodontitis at a relatively early age.

Nylund, Butterfield, French, Francis, Halpin et al (1998): The effect of one versus two sessions of oral hygiene instruction. *Journal of Dental Research* 77 1286

**Findings**

There was a beneficial effect from repeated sessions of oral hygiene advice.

O'Brien, O'Mullane and Holland (1994): An examination of the prevalence of replacement resorption following replantation of avulsed permanent incisor teeth. *Journal of Dental Research* 73 876

**Findings**

No tooth was reimplanted within the crucial first 30 minutes.

22% only were stored in a physiologic media.

After 3 years, 85% were still retained.

### **Conclusions**

Continuing education of the dental profession and the general public on storage media and necessary prompt reimplantation for avulsed teeth.

O'Connor, O'Mullane and Whelton (1993): A study of patterns of chewing gum consumption amongst the Irish population. *Journal of the Irish Dental Association* 39 93-95

### **Findings**

Twenty-one per cent chewed twice per day or more..

The frequency of chewing gum decreased with age.

Social class and geographic location had no effect on chewing habits.

### **Conclusion**

Effect of chewing gum on oral health should be investigated.

O'Dowling (1997): Oral surgery demands of a regional orthodontic unit. *Journal of the Irish Dental Association* 43 10-11

O'Dowling and McNamara (1990): The congenital absence of permanent teeth amongst Irish school children. *Journal of the Irish Dental Association* 36 136-138

### **Findings**

The prevalence of hypodontia was 11%, which was high in comparison with previous studies but in keeping with more recent studies from the UK and Ireland.

The most frequent occurrence was the congenital absence of only one tooth.

The second mandibular premolar was the most commonly congenitally missing tooth among males and females.

O'Dowling and O'Mullane (1995): Orthodontic treatment need in the Southern Health Board. *Journal of the Irish Dental Association* 41 38-41

### **Findings**

Twenty-five per cent of children examined had malocclusions severe enough to be eligible for treatment under the Department of Health Guidelines.

Two thirds of these children would require the use of fixed appliance orthodontic treatment.

O'Flynn, O'Dowling and Buckley (1997): Survey of continuing dental education in the South and Mid-West region of the postgraduate medical and dental board. *Journal of the Irish Dental Association* 43 76-77

### **Findings**

Fifty-eight per cent of respondents felt the time they had spent on courses was very worthwhile and 37% thought it was reasonably so.

Thirty per cent felt that a topic could have been covered in more detail.

### **Conclusion**

Longer and more detailed courses and more hands on courses should be provided.

O'Flynn, O'Dowling and Buckley (1998): A survey of continuing dental education in the South and Mid-West region of the postgraduate medical and dental board. *Journal of the Irish Dental Association* 44 11-12

O'Keefe (1988): Prevalence of caries and enamel defects in a high selenium area in Co. Meath 1988. MSc thesis NEHB

O'Keefe (1991): Children's dental health in 8 primary schools in South Co. Meath 1988. *Journal of the Irish Dental Association* 37 48-50

**Findings**

Caries prevalence was very low.

Most of the caries in the permanent teeth was in the pit and fissure surfaces.

Periodontal treatment needs were minor and confined to oral hygiene instruction and simple scaling.

**Conclusion**

A preventive programme of sealant and dental health education by auxiliary personnel would be beneficial in further reducing the dental disease levels in primary school children.

O'Keefe, Counihan, Counihan, O'Mullane and Whelton (1991): Prevalence of dental caries in children in Co. Clare in 1990: preliminary findings. *Journal of Dental Research* 70 776

**Findings**

Caries levels were lower in fluoridated communities especially in younger age groups.

O'Keefe and Hobdell (1992): Prevalence of caries in a high selenium area in County Meath Ireland in 1988. *Journal of Dental Research* 71 1023

**Findings**

The prevalence of caries for all age groups was low.

Lifetime residence in areas with high levels of soils selenium does not pose a threat to dental health.

O'Leary (1994): Aids - the future attitudes and behaviours of European Dental Students. *Journal of Dental Research* 73 878

**Findings**

Respondents admitted to having a responsibility to treat HIV patients yet would prefer not to treat them.

Many did not know when to refer patients for medical problems, didn't feel they had the skills to treat the oral manifestations of HIV and had not seen an HIV patient in the surgery.

**Conclusion**

European students, when qualified, will show a marked reluctance to treat suspected HIV, AIDS related complex and AIDS patients.

O'Mahony and O'Mullane (1991): Evaluation of a prebrushing mouthrinse in controlling dental plaque. *Journal of the Irish Dental Association* 37 44-47

**Findings**

Mean plaque scores in the test group were significantly lower than in the control group.

**Conclusion**

Further research is needed to assess whether the reduction will have significant long-term effects on oral health and whether rinsing with water prior to brushing will also reduce plaque scores.

O'Meera (1995): An investigation of dry mouth in an Irish population. *Journal of Dental Research* 74 953

O'Mullane (1982): Changing patterns of dental caries in Irish schoolchildren between 1961 and 1981. *Journal of Dental Research* 61 (Sp Iss) 1317-1320

**Conclusions**

A substantial decrease in the prevalence of dental caries in children of the areas studied had taken place over the 20 years.

The fact that the decrease in caries was considerably greater in subjects who had been lifetime residents in fluoridated communities suggests that fluoridation of the water supplies is an important explanation for the decrease in the prevalence of caries.

O'Mullane (1990): The future of water fluoridation. *Journal of Dental Research* 69 SI 756-759

**Findings**

Water fluoridation continues to be an effective and cost-effective strategy for caries prevention in areas where the overall caries level has declined and where the cost of water fluoridation has increased.

There is no evidence of excessive fluoride intake in communities where fluoride toothpastes are widely used.

**Conclusions**

Monitor continuously developmental defects of enamel in fluoridated communities.

Advise that further systemic fluorides not be prescribed for fluoridated communities.

Not promote the use of fluoride toothpastes containing more than 1500ppm fluoride in fluoridated areas.

O'Mullane (1992): New agents in the chemical control of plaque and gingivitis: reaction paper. *Journal of Dental Research* 71 1455-1456

O'Mullane (1994): Introduction and rationale for the use of fluoride for caries prevention. *International Dental Journal* 44 257-261

**Conclusions**

Longitudinal studies to elucidate the link between fluoride ingestion in infancy and subsequent fluorosis on permanent teeth.

Aesthetic impact of different levels of fluorosis should be established.

Effectiveness of children's toothpastes with lower levels of fluoride should be established before they are promoted for sale.

O'Mullane (1994): Reducing the cariogenic effect of sugar by adding fluoride to sugar-project background. *Advances in Dental Research* 8 181-4

**Conclusions**

There is some theoretical and laboratory evidence to support the view that adding fluoride to sugar and sugar products has the potential to reduce the cariogenic effects of sugar and sugar containing products among population groups, especially in those where it is impractical to use other fluoride vehicles.

The minimum concentration of fluoride in sugar that will bring about a caries-preventive effect needs to be determined.

O'Mullane (1995): Systemic fluorides. *Advances in Dental Research* 2 106-109

**Findings**

Subjects who claimed to brush more frequently or who claimed not to use a tumbler to rinse after toothbrushing had lower three-year DMFS increments.

The mean three year DMFS increment was lower for those subjects using 1500-ppm-NaF pastes compared with those subjects using 1000-ppm-NaF pastes.

**Conclusion**

While a reduction of 7.5% between the groups participating in the study might be regarded as a relatively small clinical achievement for an individual, from a public health point of view a similar reduction extended to all users of comparable fluoride toothpastes would have a major impact on oral health.

O'Mullane (1995): Can prevention eliminate caries? *Advances in Dental Research* 96-100

**Conclusion**

Although the preventive strategies currently available are likely to result in lower caries levels for many, for logistical reasons and because of factors associated with deprivation and poverty, caries is likely to remain a major public health problem in most communities for the foreseeable future.

O'Mullane (1998): Improvement in oral health in adults; how will this alter our research efforts? *Journal of Dental Research* 77 632

O'Mullane and McCarthy (1981): Dental health status and dental knowledge, attitudes and behaviour in Irish adults. *Journal of the Irish Dental Association* 27 54-60

**Findings**

Twenty-six per cent of the population were edentulous.

Edentulousness was positively associated with age and was lowest in males, urban dwellers, social classes AB and C1 and in those receiving care under the Social Welfare Benefit Scheme.

Eighty-nine per cent claimed to brush their teeth at least once a day.

Forty-three per cent claimed to have visited a dentist during the 12 months prior to being interviewed.

O'Mullane, Chesters, Finnerty, Huntingdon and Jones (1998): Anticalculus activity of a toothpaste with microgranules. *Journal of Dental Research* 77 897

**Findings**

The test toothpaste caused a statistically and clinically significant 30% reduction in calculus accumulation compared with the controlled pastes over a 13-week period.

O'Mullane, Clarkson, Holland, O'Hickey and Whelton (1986): Children's dental health in Ireland 1984. Stationery Office, Dublin

**Conclusions**

Fissure sealant programmes (targeted to high risk) using auxiliary personnel and field studies to evaluate their effect.

Fluoride mouthrinsing if there is no fluoride in the water.

Employment of auxiliaries with a major role in dental health education.

Policy decision on treatment of dental caries in deciduous teeth.

Extension of the eligibility for dental services to adolescents.

Regular monitoring of oral health status with small pathfinder surveys every 5 years.

O'Mullane, Clarkson and Holland (1988): Effectiveness of water fluoridation in the prevention of dental caries in Irish children. *Community Dental Health* 5 331-344

**Findings**

Of five-year-old children who had been life time residents of fluoridated communities in 1984, 52% were caries free compared with 38% in the non-fluoridated areas.

The percentages of 8-,12- and 15-year-old children found to be caries free in their permanent teeth in 1984 were also highest in those who had been lifetime residents in fluoridated communities.

**Conclusions**

The general decline in the prevalence of dental caries in both fluoridated and non-fluoridated areas is also likely to be partly explained by the widespread use of fluoride toothpastes in Ireland.

The fact that most of the dental caries in children up to the age of 15 years is confined to the posterior teeth in both fluoridated and non-fluoridated areas has implications when choosing preventive strategies.

As the distribution of dental caries is tending to become bimodal with a large proportion having little or no caries and a sizeable proportion continuing to have extensive caries, a research priority is the isolation of the high-risk caries group so that preventive measures can be especially applied to this group.

O'Mullane, O'Connor and Whelton (1991): Frequency of chewing gum usage among Irish schoolchildren and adults. *Journal of Dental Research* 70 778

O'Mullane and Whelton (1992): Oral health of Irish adults 1989-1990. Stationery Office, Dublin

**Conclusions**

Preventive strategies to be targeted at specific groups.

Increased emphasis on dental health promotion and education.

Targeting of services at the 16-26 years age group.

O'Mullane, Whelton and Galvin (1993): Health Services and women's oral health. *Journal of Dental Education* 57 749-52

**Findings**

Women tend to attend for dental care more regularly than men.

Women working in the home have higher levels of tooth loss and edentulism than those working outside the home.

The percentage edentulous is considerably higher among less well off women than any other group.

**Conclusions**

Further research is needed to investigate why women tend to loose their natural teeth at an earlier age than men do.

O'Mullane and Whelton (1994): Caries prevalence in the Republic of Ireland. *International Dental Journal* 44 387-391

**Findings**

In 1961-63, the mean dmft of 5-year-olds in the Republic of Ireland was 5.6.

The mean dmft of 5-year-olds lifetime resident of fluoridated communities in 1984 was 1.8 and the corresponding mean dmft of 5-year-old residents of non-fluoridated communities in 1984 was 3.0.

For 12-year-olds, the overall mean DMFT from 1961-63 was 4.7; the corresponding means in 1984 in fluoridated and non-fluoridated communities were 2.6 and 3.3.

Edentulism declined in the period 1979 to 1989, for example, in those aged 65 and over, the percentage edentulous in 1979 was 72% whereas in 1989 it was 48%.

**Conclusions**

There is clear vindication for the decision taken in 1960 to fluoridate the water supplies.

The wide variation in caries levels reported in 1961-62 persisted in 1984.

The figures for edentulism indicate a major improvement in the dental health of Irish adults over the last 10 years.

O'Mullane, Whelton, Galvin, Phelan and Gleeson (1994): A 12-month study of the efficacy of a prebrushing rinse in plaque removal. *Journal of Periodontology* 65 611-615

**Findings**

Pre-brushing minus post-brushing plaque scores (decrements) were significantly higher in the group using the pre-brushing rinse.

**Conclusion**

As there was no difference in the gingival bleeding index between the four groups at any of the assessments, the clinical significance of the higher plaque removal scores in the pre-brushing rinse group remains in doubt.

O'Mullane, Whelton, Costelloe, Clarke and McDermott (1996): Water fluoridation in Ireland. *Community Dental Health* 13 supp2 38-41

**Findings**

Pre-fluoridation baseline surveys and various surveys conducted over the last 30 years in the republic of Ireland show, that among residents of fluoridated communities, children

experienced lower levels of dental caries and adults retain more of their natural teeth when compared with residents of non-fluoridated communities.

The general decline in prevalence of dental caries in both fluoridated and non-fluoridated areas is also likely to be explained in part by the widespread use of fluoride toothpastes in Ireland.

Data suggest that even in areas where there is a substantial decline in the prevalence of caries, there is considerable additional benefit to be derived from water fluoridation.

### **Conclusion**

The dental caries data collected in various surveys over the last 30 years clearly vindicate the decision taken in 1960 to add fluoride to piped water supplies.

O'Mullane, Whelton, Costelloe, Clarke, McDermott and McLoughlin (1996): The results of water fluoridation on Ireland. *Journal of Public Health Dentistry* 56 SI 259-263

### **Findings**

The percentage of subjects with more than 20 natural teeth present is considerably higher in those who are lifetime residents of fluoridated communities than in those who are not. The prevalence of root caries is considerably higher among residents of non-fluoridated communities.

### **Conclusion**

The decline in the prevalence of edentulousness and the increase in the number of persons retaining their natural teeth into old age is likely to result in an increased risk of root surface caries. Hence the overall impact of fluoridation on root surface caries is likely to become more important in the future.

O'Mullane, Kavanagh, Ellwood, Chesters, Schafer, Huntingdon and Jones (1997): 3-year clinical trial of a combination of trimetaphosphate and sodium fluoride in silica toothpastes. *Journal of Dental Research* 76 1776-1781

O'Neill (1999): A study of the oral health of homeless men. MSc thesis, Dublin

O'Reilly and Gavin (1992): Planning primary care dental services for school children. *Journal of Dental Research* 71 1025

### **Findings**

A structure and systematic delivery of dental care to schoolchildren facilitates accurate manpower planning at a local level and also enables expansion of services in a planned manner.

O'Reilly and Barry (1995 ): Patterns of referral to an oral surgery department. *Journal of Dental Research* 74 951

Ormsby (1993): Oral cancer in Northwest Ireland; A 16-year retrospective study. *Journal of the Irish Dental Association* 39 118-120

### **Findings**

Among lip cancers, there was a marked predominance of men and outdoor workers. Intra-oral cancer incidences approximate those in other parts of Ireland and many other Western countries.

Lip cancer incidences are higher than those in other parts of Ireland and many Western countries are.

Pai, Whelton and O'Mullane (1996): Diffuse enamel opacities in Ireland and the United Kingdom. *Journal of Dental Research* 75 1241

**Findings**

For 12-year-old children in County Clare in 1991, the prevalence of diffuse enamel opacities was 17% in fluoridated areas and 13% in non-fluoridated areas.

In the Western Health Board in 1992, the figures were 28% and 25% respectively and in the fluoridated Eastern Health Board, the figure was 28%.

In the UK in 1993, the figure was 28%.

**Conclusions**

The prevalence of diffuse enamel opacities in Irish 12-year-old children is similar to that of 12-year-old children in the UK.

In Ireland, there is a lower prevalence of diffuse enamel opacities in children living in non-fluoridated areas compared with fluoridated areas.

Renehan (1998): An appraisal of continuing dental education in Ireland. *Journal of Dental Research* 77 1287

**Findings**

There was a high interest in practical hands-on courses.

Respondents attended courses in order to improve their practical skills and to improve their knowledge.

There was general agreement on the level of dissatisfaction with the local arrangements for CDE.

**Conclusions**

i) a more nationally structured approach be taken to the organisation of continuing dental education

ii) courses receive accreditation

iii) course participants receive credits for continuing dental education participation

Roe (2000): A study of the profile, referral and treatment patterns of patients attending for dental general anaesthesia to Eastern Health Board services at St. James', Dublin.

MSc Thesis, University College Cork

**Conclusions**

Objective criteria for referral to the GA service should be formulated.

Pre-anaesthetic assessment should be introduced.

Alternative to general anaesthesia should be introduced.

Rowan and Byrne (1998): Periodontal instrumentation; potential effects on the operator. *Journal of Dental Research* 77 1290

Sadlier, McCartan and O'Mullane (1991): Smoking habits of dental Irish undergraduates. *Journal of Dental Research* 70 778

**Findings**

Smoking habits of dental undergraduates are not significantly altered by their study of disease.

Shalloe, O'Mullane and Whelton (1994): Loss of periodontal attachment in Irish adults. *Journal of Dental Research* 73 877

**Findings**

Subjects who brushed their teeth frequently and attended a dentist regularly and routinely had a mean lower loss of attachment score than those who brushed infrequently and did not attend a dentist regularly.

This was particularly noticeable in the older age groups.

Southern Health Board (1995): Oral health of children and adolescents in the Southern Health Board 1995. Southern Health Board Report, Southern Health Board

Sleeman and Barry (1995): Cancellations on the day - day case oral surgery. *Journal of Dental Research* 74 951

Sleeman, Barry, Ryan and Allen (1995): Day case oral surgery: a review of 25 years experience at the Dublin Dental Hospital. *British Dental Journal* 179 221-224

**Findings**

The annual totals of day case oral surgery declined over the period from 1,549 to 766.

The number of operations to remove impacted wisdom teeth increased dramatically over the period from 3.8% of all operations in 1968 to 39.5% in 1992.

The number of extractions of other permanent teeth reduced considerably over the same period.

The number of deciduous extractions remained almost constant over the period.

**Conclusions**

The initial decline was due to a reduction in the number of operating lists.

The decline over the last 4 years of the period may be due to increases in the complexity of general anaesthetic techniques and patient monitoring as there was no decline in the number of patients waiting for surgery. However, the absence of a similar reduction in deciduous extractions is difficult to explain.

The increase in patients with impacted teeth is due in part to the reduction in routine extractions reflecting the reduction in caries rate.

Western Health Board (1994): Children's dental health in the Western Health Board region, 1991-1992. Western Health Board, University College Cork

Whelan, O'Donoghue, O'Reilly, Omar, Rowan et al (1998): A study of denture wearing in a selected elderly institutionalised population. *Journal of Dental Research* 77 1289

**Findings**

Fifty-three per cent of the population was found to be edentulous.

Thirty-two per cent of the edentulous wore no dentures.

Denture hygiene was very poor with 96% of dentures having hard or soft debris.

Eighteen per cent claimed to have difficulty chewing with their dentures.

Twenty per cent were dissatisfied with the appearance of their dentures.

Thirty-one per cent of the residents felt they needed new dentures.

**Conclusions**

To review the existing delivery of the dental service in relation to denture provision within the institution.

To improve denture hygiene by educating residents and nursing staff in denture care and marking of dentures.

Whelton and O'Mullane (1991): Periodontal disease among Irish adults. *Journal of Dental Research* 70 777

**Findings**

A high proportion of the periodontal treatment requirements of Irish adults comprises scaling and polishing of the teeth.

Whelton and O'Mullane (1992): Caries experience according to fluoridation status in Irish adults. *Journal of Dental Research* 71 612

**Findings**

The difference in DMFT between the fluoride and non-fluoride groups was lower than expected.

Whelton and O'Mullane (1992): Dental caries in Irish adults in 1989. *Journal of Dental Research* 71 1023

**Findings**

Levels of caries were high amongst Irish adults and there was a substantial increase in caries levels between ages 16-25 and 25-34 years.

Whelton, O'Mullane and Holland (1993): The prevalence of root surface caries amongst Irish adults. *Gerodontology* 10 72-75

**Findings**

Prevalence of root surface caries was highest in older age groups, amongst females, residents of non-fluoridated communities and those earning low incomes.

**Conclusion**

With more persons retaining their natural teeth into middle and old age, the prevalence of root surface caries is likely to increase in the future.

Whelton, O'Mullane, Clarke and McDermott (1995): Caries in children in the East of Ireland in 1993. *Journal of Dental Research* 74 410

**Findings**

Caries levels recorded in 1993 were more than 30% lower than those recorded in 1984 in all age groups.

Wide variations in caries levels were found amongst the administrative regions.

Ziada, Orr and Benington (1998): Stress analysis in a pier retainer of a resin bonded bridge. *Journal of Dental Research* 77 694

**Findings**

The use of a pier abutment in a resin bonded bridge should be avoided.

## Appendix I

### Studies on Special Needs Patients

**Costelloe (1990): Dental health status of mentally and physically handicapped adults and children in Galway community area of the Western Health Board. Journal of the Irish Dental Association 36 99-101**

#### Purpose of Study

To assess the dental health status of children with mental and physical disabilities in the Galway Community Care Area and to plan an improved dental service for this group.

#### Method

The survey was carried out by questionnaire and clinical examination. From a total population of 795, samples of 155 adults and 171 children were selected. Trauma, periodontal disease, denture status, dental caries experience and fissure sealant levels were assessed in the clinical examination.

Attitudes towards dental health, diet, professional dental care and use of medication and parental occupation and status were assessed in the questionnaire.

#### Results

Mean DMFT for the children compared favourably with the National Children's Survey. The large M component of the overall DMFT showed extractions had been the treatment of choice. Periodontal disease levels were high in the adult group but most could be treated within primary care facilities and by preventive programmes.

The survey also showed a large unmet need for dentures amongst the adults, based upon the subjective judgement of the examiner of patient suitability.

**Holland, Lucey, Kavanagh and O'Mullane (1997): Costs in providing dental treatment for severely handicapped patients under general anaesthesia. Journal of the Irish Dental Association 43 72-75**

The costs of providing dental treatment for severely handicapped persons are investigated in this study. The costs involved were found high at IR£613 per patient. The study recommends that the full potential of primary care services for handicapped persons be developed to reduce the use of expensive secondary care resources.

**Holland and O'Mullane (1990): The organisation of dental care for groups of mentally handicapped persons. Community Dental Health 7 285-293**

One hundred and eighty-nine mentally handicapped persons attending residential and day institutions were examined and assessed for treatment need. At baseline, most caries

remained untreated and most treatment consisted of extractions. A judgement was made as to whether any treated required could be carried out in primary or secondary care. Final year dental students, junior hospital staff or a community dental officer treated all those needing primary care. Those requiring secondary care were assigned to a consultant in paediatric dentistry. Non-consultant personnel carried out most treatment. A follow-up examination four years later showed improvement in caries treatment with an increase in the level of restorative care. Periodontal treatment need was unchanged.

Before the setting up of this service in 1985, no organised dental service existed in Ireland for the mentally handicapped. This report supports the view that the majority of handicapped people may be cared for in the dental surgery by practitioners with no specialist training in the care of the mentally handicapped.

**Nolan (2000): Survey of the oral health status of children and young adolescents with intellectual and physical disability in Galway City and County. MSc thesis, Cork**

The purpose of the study was to measure oral health status of children and adolescents with mental and physical disabilities in the Galway area and to determine improvements in oral health since the 1986 survey.

The results show a comparable level of oral health to mainstream children of the same age. There was a high proportion of unmet need in 12 year-olds.

There was an overall improvement in oral health status since the survey in 1986.

## Appendix II

### Abstracts of Papers Included in the Report

Algali, Fenton and Convery (1996): Reimplantation of traumatically avulsed permanent incisors in children attending Dublin Dental Hospital. *Journal of Dental Research* 75 1242

#### Abstract

Forty-two teeth in 35 patients who were treated between 1988-90 were evaluated. Only those with a minimum of one-year follow-up were included. More boys (22) than girls (13) were affected. Most injuries occurred in the 6-8 year-old group. Upper left centrals (50%) were the most commonly affected teeth. Falls from bicycles or onto the ground were the main incidents reported. None of the teeth which were re-implanted within 30 minutes were ultimately lost. Fourteen of the 27 teeth which were a success were re-implanted within 1 hour. The extra alveolar period for 13 of the 15 teeth which failed was more than one hour. Milk was the most frequently used storage medium for transport of the tooth and together with saliva approached significance in relation to success when compared with all other media. Twenty-seven teeth were retained satisfactorily. Six had definitive root canal treatment and one was vital. Twenty teeth were being maintained with calcium hydroxide in the canal. Failure was recorded for 15. Root resorption affected 10. Three had further trauma and two were removed as they were very extruded.

Al-Khateeb, O'Mullane and Whelton (1990): Comparison of the need for periodontal care amongst 15 year old children in Ireland and Saudi Arabia as assessed by CPITN. *Community Dentistry and Oral Epidemiology* 18 55

#### Abstract

A total of 2454 Irish children and 480 Saudi children were examined by trained and calibrated examiners using CPITN. Of the Irish children, 43% were regarded as healthy, 21% had bleeding on probing and 35% had calculus. The corresponding figures for the Saudi Arabian children were similar. Pocketing was rare for both groups. However, the number of sextant affected per child by bleeding and calculus was considerably higher in Saudi Arabia. In comparison with data from 54 studies in different countries, periodontal disease as assessed by the CPITN in both Ireland and Saudi Arabia is at the lower end of the international scale.

Attwood, Blinkhorn, O'Hickey and Gavin (1992): Incidence of enamel defects of children resident in Dublin. *Journal of Dental Research* 71 543

Water fluoridation in Dublin is a minor cause of enamel defects in 12-year-olds.

#### Abstract

The Public Water supply of Dublin has been fluoridated at 1 ppm for more than 25 years. As there have been a number of reports that dental fluorosis is increasing in communities with optimally fluoridated water, a study was planned to investigate the incidence of enamel defects in 12-year-old children in Dublin. 600 children were randomly sampled from a random sample of schools in Dublin. Examinations were carried out by two calibrated examiners using a standard light source. The children were examined for

enamel defects using the Developmental Defects of Enamel (DDE) modified epidemiological index. The index teeth were upper first premolars, canines and incisors and lower first molars. 551 lifetime residents were included in the analysis. 341 (61.8%) of the children had no enamel defects. 161 (29.2%) had at least one demarcated opacity, 92 (16.7%) had diffuse opacities and 12 (2.2%) had enamel hypoplasia. The majority of the enamel defects affected less than one third of the tooth surface. The majority of enamel defects recorded in twelve-year-old children resident in Dublin were demarcated opacities (60.8%). Only 19.8% of defects were diffuse opacities, likely to be due to fluorosis. Thus, water fluoridation in Dublin is a minor cause of enamel defects in 12 year olds.

Barry, Sleeman, Ryan and Allen (1996): Oral surgery at St Mary's Hospital, Chapelizod. *Journal of the Irish Dental Association* 42 9-12

#### Abstract

To mark the first quarter century of the existence of the Oral Surgery unit at St. Mary's Hospital, Chapelizod, an audit was undertaken. Twenty-nine thousand, three hundred and seventy-four (29,374) entries in the operations register were analysed, examining annual totals, categories of operation, the changing patterns of anaesthesia, including cancellations on the day, and the evolution of a true day-case service. The results showed a decline in total numbers and in some operation categories. The most striking reductions were in extractions of carious teeth and in preprosthetic surgery. The most marked increase was in surgery for impacted teeth. While general anaesthesia remains the most commonly used form of anaesthesia, there has been an increased utilisation of sedation. Since the earlier years, the number of patients requiring admission post-operatively has steadily decreased but more patients have been cancelled on the day of operation. Most of the changes described reflect the influence of health care economics and the effects of fluoridation.

Blake, Dowling, Garvey and McNamara (1998): A profile of orthodontic referrals. *Journal of Dental Research* 77 1285

#### Abstract

The Eastern Health Board Regional Orthodontic Department has seen over 3000 patients for orthodontic assessment since its establishment in September 1996. The aim of this study was to profile patients on the orthodontic waiting list in the Public Health Services. 600 initial assessment charts were reviewed to determine patient age, gender, classification of malocclusion, medical status, dental status and medical cardholder status. Patients requiring oral surgery care in conjunction with orthodontic treatment were noted. 56.2% of those assessed were female and 43.8% males. The age range was 8 years to 24 years with a mean of 14.6 years and a standard deviation of 2.1 years. 26% of the patients were medical cardholders. Caries was recorded in 47%. There was no gender bias for either caries recorded or medical card status. Class II division I was the most common type of malocclusion (46.7%). 65.3% were deemed eligible for orthodontic care of which 59.4% were female. In agreement with previous epidemiological studies, Class I division I was the most common malocclusion found in patients presenting for orthodontic treatment. Dental caries was the most common reason for patients being precluded from commencing active orthodontic care.

Blake, Garvey, Bray and McKiernan (1998): An audit of the orthognathic surgical procedures carried out in the national maxillofacial unit over a 5-year period. *Journal of the Irish Dental Association* 44 3-6

Abstract

An audit was conducted of all the orthognathic surgical procedures carried out in the National Maxillofacial Unit during the five-year period from July 1991 to July 1996. All patients who had orthognathic surgery in St James's hospital in the five-year period were identified. 196 patients had orthognathic surgery during the five year period. 36.3% were males and 63.7% females. The average age at time of surgery was 21 years 1 month. Bimaxillary osteotomy was carried out in 58% of cases and single jaw surgery in 42% of cases. The majority of patients (81%) presented with a Class III skeletal disharmony. The demand for orthognathic correction of skeletal disharmonies increased steadily over the period 1991 to 1995. A medical condition played a significant role in the aetiology of the presenting skeletal disharmony in 16% of cases.

Blinkhorn, Attwood, Gavin and O'Hickey (1992): Joint epidemiological survey on dental health of 12-year-old schoolchildren in Dublin and Glasgow. *Community Dentistry and Oral Epidemiology* 20 307

Abstract

The population of Dublin has received fluoridated water for more than 25 years, while Glasgow has never benefited from this public health measure. As Greater Glasgow is taking steps to introduce fluoridation, it seemed opportune to compare the dental health of children from Dublin and Glasgow to gain a greater insight into the benefits of fluoridation. More than six hundred 12-year-old children were randomly sampled from schools in each city. The examinations were carried out by two calibrated examiners under controlled conditions. Only life-time residents were included in the analysis which was carried out with the Dental Analysis System (DAS). The eligible sample consisted of 599 children in Glasgow and 551 in Dublin. Mean DMFT scores for Glasgow and Dublin 12-year-old children were 2.70 and 1.48 respectively, 45% lower in Dublin compared with Glasgow ( $p < 0.001$ ). A similar difference was also found when DMFS scores were studied.

Bradley (1998): Oral health of Irish travellers. MSc thesis, King's College London

Abstract

The aim of this project was to investigate qualitatively the oral health of Irish travellers. It explored the oral health experiences, knowledge, attitudes, behaviours and barriers to dental care. Twenty-eight Travellers were interviewed at three centres in County Wicklow, Ireland using semi-structured in-depth interviews. Each interview was tape-recorded, transcribed and analysed using content analysis. The findings of the research were that the Travellers interviewed had low levels of, and often inaccurate, knowledge about dental health and dental services. They valued their teeth more for appearance than function. They had little experience of asymptomatic dental attendance and when they did attend they usually had teeth extracted. There are aspects of Traveller culture that affect oral health and the provision of oral health services, these include wash bowl practices and their relationship to tooth brushing, time management and its relationship to

seeking care, and concepts of independence and toughness that affect how toothache is managed. Barriers to dental care include those found in the general population, those found in lower socio-economic groups, some found in other ethnic minorities and some that are distinctive to Travellers. Travellers' oral health reflects their extreme social disadvantage coupled with their ethnic minority status.

Buckley (1993): A comparison of the attitudes of dentists and the public to periodontal health in Ireland. *International Dental Journal* 43 161-166

Abstract

The Irish National Gum Health Campaign began in 1989 and consisted of three stages. A questionnaire was sent to all dentists on the Irish Dental Register regarding their perception of their patients' knowledge of periodontal health and disease. In addition a postgraduate programme was established for dentists to learn a soft tissue screening programme based on the CPITN method but termed the Basic Periodontal Examination. Finally, public attitudes were assessed by questionnaire and the results compared. The public had a far greater awareness of periodontal disease than the dentists had perceived. Overall the Campaign showed encouraging results primarily through the raising of awareness in both the dental profession and the public of the importance of periodontal health.

Buckley (1994): Periodontal disease in an Irish dental practice. *Journal of Dental Research* 73 879

Abstract

As part of the Irish National GUM Health Campaign, dentists in general dental practice were instructed on the use of the Basic Periodontal Screening process as a means of screening patients for periodontal disease. Dentists were requested to return data obtained on patients screened by this method. This paper reports on data from 2,115 patients who attended dentists for routine treatment. Each dentist examined patients who attended his/her practice and six recordings were made corresponding to six sextants of the mouth. The data, summarised as mean BPE scores for each sextant, were analysed for the following age groups: <13 years (children); 13-25 years; 26-35 years; 36-45 years; 46-55 years; 56-65 years; and >65 years. The results demonstrated a steady increase in mean BPE scores with age, but bleeding sextants were highest in young adults. Calculus was widespread in all adult groups. Periodontal pocketing was present in over 50% of all patients examined, and only 5% of patients had completely healthy mouths (score = zero). It is concluded that there is a continuing need to increase public awareness of periodontal disease.

Buckley and Crowley (1993): The continuing dental education (CDE) activities of a regional cohort of Irish dentists - baseline study. *Journal of the Irish Dental Association* 39 54-59

Abstract

The need for continuing dental education (CDE) throughout one's career is becoming increasingly accepted by the modern practitioner. The current paper is part of a longitudinal investigation of the various conceptual, practical and attitudinal aspects of CDE. (Based on the responses of a representative sample of 146 dentists, it documents

the level of participation in CDE among practitioners in the South and Mid-West regions of Ireland, at a baseline examination). Only 41% of respondents belonged to more than one professional association, while 55% subscribed to more than one journal. The Irish Dental Association and the present journal dominated these statistics. There was a generally low level of involvement in elements of CDE, such as attendance at scientific conferences, professional courses and occasional meetings. There was a high degree of consistency in the respondents' participation in CDE-related activities. Thus dentists who belonged to a number of organisations and subscribed to various journals, also tended to more frequently attend relevant conferences, courses and meetings. With some exceptions, specialist and hospital-based dentists were more likely to be involved in CDE activities.

Buckley, Zaida and McElhinney (1998): Comparison of a periodontal screening method with full periodontal examination. *Journal of Dental Research* 77 1285

Abstract

The purpose of this study was to test the efficacy of the Basic Periodontal Examination System (BPE) as a screening method for periodontal disease by comparing it with a full periodontal examination (FPE). The study was carried out in the Cork Dental Hospital in May and June 1996. Twenty-four subjects, 11 men and 13 women, between the ages of 15 and 64 years each with a minimum of 18 natural teeth were randomly selected from patients visiting the periodontal clinic. None of the patients had systemic health problems and none was taking medication during the month prior to the study. The examinations were carried out by two calibrated examiners, one carrying out BPE and the other FPE on each patient. BPE Code I was recorded for 4 patients, BPE Code 2 for 6 patients, BPE Code 3 for 10 patients and BPE Code 4 for 4 patients. When compared to FPE, estimated by deepest pocket measurements, BPE was identical to FPE in 12 patients. BPE underestimated periodontal disease in 7 patients and overestimated periodontal disease in 5 patients. However, 5 of the underestimates and all of the overestimates varied by one code integer (<1 mm pocket depth). There were only 2 cases where BPE underestimated periodontal disease by more than one integer i.e. Code I - Code 3. It is concluded that BPE is a useful system for periodontal screening but it is limited in periodontal examination parameters such as furcation, recession (attachment loss) and mobility measurements, which are not recorded.

Burden, McGuinness and McNamara (1998): Treatment outcome for a sample of patients with class II division 1 malocclusion treated at a regional hospital orthodontic department. *Journal of the Irish Dental Association* 44 67

Abstract

This retrospective study assessed the outcome of orthodontic treatment of 264 patients with Class II division 1 malocclusion (overjet greater than 6 mm). The sample comprised patients who had completed their fixed appliance orthodontic treatment at a regional hospital orthodontic unit in the Republic of Ireland. The PAR Index (Peer Assessment Rating) was used to evaluate treatment outcome using before and after treatment study casts. The results revealed that treatment for this particular type of malocclusion was highly effective with a very few patients failing to benefit from their orthodontic treatment.

Burke and McConnell (2000): State funded extractions and endodontic treatment in Ireland in 1997. *Journal of Dental Research* 79 1230

Abstract

This study was designed to compare the patterns of extractions and endodontic treatment delivered under the Dental Benefits Scheme (DBS) and Dental Treatment Services Scheme (DTSS) in the Republic of Ireland and under the National Health Service (NHS) in Northern Ireland in 1997. The DBS provides dental care for insured workers and their spouses and the DTSS provides dental care for medical card holders by general dental practitioners. The NHS provides dental treatment for all members of the population. Data provided by the Department of Health and Children in the Republic of Ireland and the Central Services Agency in Northern Ireland were analysed to determine the number of extractions and endodontic care as well as those items of treatment as a percentage of all adult treatments provided. The number (percentage of total adult treatment) of extractions and endodontic treatment delivered was:

Treatment	DBS	DTSS	NHS
Extraction	83892 (6.8)	77102 (21.2)	94858 (15.4)
Endodontic	11828 (0.9)	6179 (1.7)	40027 (6.5)

A significantly lower percentage of extractions was carried out under the DBS in 1997 ( $p < 0.05$ ) and a significantly greater percentage of endodontic treatment was carried out under the NHS in 1997 ( $p < 0.05$ ). Significant differences in the percentage of extractions and endodontic treatment existed between the state schemes in the Republic of Ireland and between the schemes in the Republic of Ireland and Northern Ireland.

Clarke (2000): Social inequalities in dental caries experienced by children in the Eastern Health Board Region 1993. MSc thesis, Cork.

Abstract

In 1993, the Eastern Health Board conducted a survey of the dental health of children in 26 separate catchment areas. The preliminary results indicated that there was considerable variation in caries experience between these areas. For example the percentage of children caries free at 5-years of age was found to vary from 86% to 28%, while mean DMFS at 12 years of age varied from 1.3 to 4.4. Little attention was paid to the possible determinants of this variation. In 1997, a National Deprivation Index was produced based on census data, which permitted the allocation of each District Electoral Division to one of 5 'Deprivation Levels'. This paper includes a comprehensive literature review of the possible determinants of the variation in caries levels, and concludes that differences in the socio-economic status of the different populations is the most likely explanation for most of the variation. The DED 'deprivation levels' were aggregated to estimate the relative deprivation of the 26 catchment areas. The correlation between deprivation and the caries variation between areas was computed. A high, statistically significant correlation was found for the deciduous dentition in both 5- and 8-year olds in Dublin only, with deprivation accounting for approximately 50% of the variation in caries levels. The Deprivation Index was not well correlated with dental caries in respect of the permanent dentition of Dublin children, or to either the deciduous or permanent dentition of children outside Dublin. A regression analysis utilising deprivation, mean dmfs at 5-years of age together with urban / rural location as the independent variables, explained 80% of the variation between the 26 catchment areas in mean DMFT scores at

12-years of age. At present, resources are allocated to Health Board Dental services based solely on the number of children in the region and their water fluoridation status. The research reported here suggests that consideration should be given to developing a more refined model utilising additional variables, including a measure of relative deprivation, if equity in health outcomes and in service provision is to be encouraged.

Clarkson and O'Mullane (1983): Edentulousness in the United Kingdom and Ireland. *Community Dentistry and Oral Epidemiology* 11 317-20

Abstract

Surveys of adult (16 yr and over) dental health were conducted in England/Wales and Scotland (n = 5967) and in Ireland (n = 1764) and Northern Ireland (n = 1176) in 1979. From the results of these surveys a comparison is made between levels of edentulousness, attendance patterns, attitude to loss of teeth and the wearing of full dentures. Scotland had the highest level of edentulousness (39%) and Ireland the lowest (26%). England/Wales had a level of 29% and Northern Ireland 33%. The percentage edentulous increased considerably with age and females had a higher level of edentulousness than males. Regular attendance at the dentist was lowest in Ireland and in all countries there was a greater preference for filling rather than extraction of teeth. Levels of edentulousness do not appear to be directly related to any of the parameters investigated.

Clarkson and O'Mullane (1992): Prevalence of enamel defects/fluorosis in fluoridated and non-fluoridated areas in Ireland. *Community Dentistry and Oral Epidemiology* 20 196-199

Abstract

Water fluoridation was introduced in Ireland in 1964 and in recent years the availability of fluoride from other sources had increased. As part of a National Survey of Children's Health in Ireland, Dean's and the DDE indices were used to determine the prevalence of enamel fluorosis/defects in 8- and 15-year-old children in fluoridated and non-fluoridated areas. Over 94% of the children examined in all areas were regarded as having normal enamel, as defined by Dean's index, the remainder showing evidence of either questionable, very mild or mild fluorosis. Between 52% and 63% of the children had one or more teeth affected by enamel defects when measured by the DDE index. The prevalence of enamel fluorosis/defects was similar in children living in fluoridated and non-fluoridated areas but the prevalence of diffuse opacities (DDE) was higher in the fluoridated areas.

Costelloe (1990): Dental health status of mentally and physically handicapped adults and children in Galway community area of the Western Health Board. *Journal of the Irish Dental Association* 36 99-101

Abstract

An epidemiological survey was carried out to assess the treatment needs of the mentally and physically handicapped in the Galway Community Care Area. The survey was conducted by both questionnaire and clinical examination. The results of the survey indicate that the pattern of dental caries for the mentally and physically handicapped children is similar to that for the rest of the child population in Ireland. The results also

show that extraction has been the treatment of choice for the mentally and physically handicapped. The periodontal assessment of the handicapped adult population found that moderate pocketing accounted for the bulk of periodontal disease present.

Creedon and O'Mullane (2000): Caries levels amongst 5-year-old children in County Kerry. *Journal of Dental Research* 79 1227

Abstract

Over the past 35 years there has been a major reduction in caries levels amongst children in the Republic of Ireland. In the Southern Health Board (SHB) for example, caries levels amongst 5-year-old children has declined from a mean dmft of 6.4 in 1961-1963 to 2.5 in 1984 in fluoridated areas. The corresponding value in non-fluoridated areas in 1984 was 4.0. In 1995, the mean dmft had further decreased to 1.1 and 2.3 in fluoridated and non-fluoridated areas respectively. In these surveys it was found that caries levels were higher in the Kerry Community Care Area than in the other four Community Care Areas in the SHB. The purpose of this study was to investigate the factors that lead to high caries levels in 5-year-old children in Kerry.

A representative sample of 5-year-old children (n=611) was examined for caries. Information on caries risk factors was collected by means of a parental questionnaire. The dmft was 1.2 ( $\pm 2.2$ ) and 2.9 ( $\pm 3.9$ ) in fluoridated and non-fluoridated areas respectively. There was a wide variation in caries levels between geographical areas in Co. Kerry ranging from 0.7 ( $\pm 1.3$ ) in Tralee urban area (n=60) which has a fluoridated water supply to 3.0 ( $\pm 4.4$ ) in Caherciveen/Kenmare rural area (n=55) which has a non-fluoridated water supply. Caries levels were related to oral hygiene practices, dietary practices, and parental possession of a medical card. In the case of the latter for example, those children whose parents possessed a medical card had a mean dmft of 2.6 ( $\pm 3.8$ ) compared to a dmft of 1.8 ( $\pm 2.9$ ) for those whose parents did not possess a medical card. The prevalence of dental caries amongst 5-year-old children in Co. Kerry was highest in those residing in non-fluoridated communities, in those whose parents possessed a medical card and in those who had poor oral hygiene and dietary practices.

Daly (1998): Oral health needs assessment of residents in an elderly institution. MSc thesis, Kings College London.

Abstract

The oral health needs of the 183 residents in an elderly institution in Athy, Ireland, were investigated. Nineteen residents were too frail and sick to participate. The methods used were clinical examinations and questionnaires. The clinical examination revealed that 72% of the residents were edentulous. Of those who were edentulous, 78% had no artificial teeth. The number of teeth in dentate subjects was very small (mean 3.0) and the condition of those present was poor. Eighty-three per cent of denture wearers and 75% of dentate residents had poor oral hygiene. The normative assessment found 112 residents (61%) to be in need of treatment. Seventeen per cent of the residents complained of pain and discomfort and 24% found the need for a dentist. Carers were found to have a positive attitude towards dentists and dentistry. They had no training in mouth care procedures but were willing to learn. No formal oral care was being provided for the residents. Demand for oral care was low. It is concluded that there is a need for

dental personnel to establish oral health programmes and to provide oral care on a regular basis.

Dowling, Fitzpatrick, Garvey and McNamara (1997): Eastern Health Board regional orthodontic service- an initial audit. *Journal of the Irish Dental Association* 43 107-109  
Abstract

This initial audit of 600 recently assessed Eastern Health Board orthodontic patients suggests that a large number of them (47 per cent) requires referral for routine restorative and preventive dental care. Closer links are needed with general dental practitioners and community dental surgeons to resolve these needs. The trend for a high referral of females and Class 11 Division 1 malocclusion type correlated well with studies in other countries.

Eastern Health Board (1994): Children's dental health in the Eastern Health Board region, 1993. Report, Eastern Health Board and University College Cork  
Abstract

A total of 8,668 subjects aged 5, 8, 12 and 15 years resident in the Eastern Health Board were examined for dental caries, periodontal (gum) disease, enamel opacities, trauma of anterior (front) teeth and dentofacial anomalies. Dental knowledge, attitudes and behaviour were also assessed. This report is confined to the clinical aspects of the study. The examining teams were recruited from within the Eastern Health Board Dental Services. The teams were trained and calibrated in the use of the W.H.O. methods of recording clinical dental conditions.

#### Findings

Overall, there has been a major improvement in the dental health of children and teenagers in the Eastern Health Board since 1984. For example, the results of the present survey show that the prevalence of dental caries in deciduous and permanent teeth has declined by approximately 40 per cent. The prevalence of dental caries varies widely between the eight dental areas and also between the different subareas within each dental area. The pattern of treatment of dental caries also varies widely between areas and subareas. For example for 12-year-olds, the percentage of the total decay experience attributable to fillings varies between 23 and 75 per cent. Wide variation was also seen in the level of fissure sealants among 8 and 12-year-olds.

The percentage of subjects with at least one tooth affected by diffuse opacities, which is a measure of fluoride intake during tooth development and maturation, varied widely between areas, the majority having of the order of 30 to 45 per cent affected. These figures are similar to data recorded in comparable population groups in Ireland and overseas.

The need for periodontal care was similar to that recorded for the Eastern Health Board in the 1984 Survey of Children's Dental Health, although the variation between the different dental areas was large. However, the results confirm that on the basis of assessment of the need for periodontal care by eight experienced clinicians, in general, approximately 60 per cent of 12 and 15-year-olds required oral hygiene instruction and/or scaling for

removal of calculus. The need for more advanced periodontal care was negligible. Traumatic injuries to permanent incisors was higher in males and increased with age.

Ellwood and O'Mullane (1994): Toothbrushing behaviour in twelve-year-old children and dental enamel opacities. *Journal of the Irish Dental Association* 40 12-15

Abstract

This paper examines the association between the use of fluoride toothpastes by 12-year-old children and enamel opacities. Some problems inherent in measuring the effect of fluoride toothpaste on developing enamel are discussed. Data are shown that consider the association between tooth brushing behaviour and dental enamel defects in 1,934 children from areas in North Wales with low levels of fluoride in the drinking water (< 0.1 ppm F). Children who brushed more frequently were at greater risk of having diffuse types of enamel opacity present. No associations were identified between the amount of toothpaste used by the 12-year-old subjects or the rinsing method used when brushing and enamel opacities.

Ellwood and O'Mullane (1995): Dental enamel opacities in three groups with varying levels of fluoride in their drinking water. *Caries Research* 29 137-142

Abstract

The aim of this study was to compare the prevalence of enamel defects in three groups with different levels of fluoride in their water supplies. These data, collected using a reproducible method, will form the baseline for ongoing studies on the prevalence of enamel defects. The overall prevalence of enamel defects was similar in all three groups. However, for individual categories of defects differences were found. The prevalence of demarcated opacities was highest in the group with the lowest level of fluoride in the drinking water. The prevalence of hypomineralised enamel defects (TF index) increased with increasing levels of fluoride in the drinking water. However, the number of teeth affected by these enamel defects and their severity did not follow the dose-response relationship expected from the fluoride levels in the drinking water. Associations between both the frequency of tooth brushing and the age tooth brushing was commenced and hypomineralised enamel defects were identified.

Ellwood and O'Mullane (1996): Association between developmental enamel defects and caries in populations with and without fluoride in their drinking water. *Journal of public Health Dentistry* 56 76-80

Abstract

The purpose of this study was to consider the association between developmental enamel defects and dental caries in children from areas with different levels of fluoride in their drinking water. Children (mean age = 14.1  $\pm$  0.3 years) were examined from areas with less than 0.1 ppm (n = 267) and 0.7 ppm (n = 196) in their drinking water. These areas were chosen to contain subjects with a similar social profile. Two types of enamel defect were considered: those consistent with the diagnostic criteria of the Thylstrup Fejerskov (TF) index and demarcated opacities. Dental caries was recorded for surfaces at the level of the dentinal lesion. Subjects with one or more demarcated opacities had more dental caries than those without these opacities present. Children with enamel defects scored with the TF index tended to have less dental caries than those without these defects

present. However, the difference was only statistically significant in the area without fluoride in the drinking water. Developmental enamel defects may be useful markers of caries susceptibility, which should be considered in the risk-benefit assessment for use of fluoride. Further studies are required to clarify the relationship between developmental enamel opacities and dental caries and the reasons for any associations.

Field and McNamara (1998): Irish orthodontic referrals - dental awareness. *Journal of Dental Research* 77 1285

Abstract

The aim of this prospective study was to determine the dental awareness of patients presenting for orthodontic assessment. Consecutive patients presenting for orthodontic assessment were clinically examined and provided with a questionnaire regarding their dental and oral hygiene practices. Eligibility for orthodontic services was determined according to the 1986 Department of Health Guidelines, and as is routine for all patients, prior to orthodontic assessment all patients were informed of the purpose of the orthodontic visit and the importance of being dentally fit. A total of 250 patients were examined, 139 females and 111 males. The mean age of the group was 14 years range 8 - 19 yrs, with no significant gender difference. The mean DMF was 2.15 with a range 0 to 14. The DMF for females was higher at 2.3 (range 0 to 14) than for males: DMF 1.8 (range 0 to 12). Dental caries was detected in 1 in 4 patients (69 patients, 27%). In 93 patients (37%) a DMF of zero was recorded. Fissure sealants were detected in 169 patients (67%). When questioned on oral hygiene practices all respondents used toothbrush and toothpaste. The use of adjunctive oral hygiene measures was confined to relatively few patients, 22 patients (9%) used floss, 22 patients (9%) used mouthrinses. Attendance for routine dental treatment was variable. Less than half (102 patients, 42%) had attended in the previous 6 months, while 86 (34%) had not attended in the previous 2 years or could not recall when they last attended. A total of 72 patients (29%) did not know the purpose of the visit in spite of the details given in the appointment notification. This study reveals a general lack of dental awareness in patients seeking orthodontic treatment. In view of the risks associated with orthodontic treatment, its provision in these circumstances is questionable.

Goggin, O'Mullane and Whelton (1991): The effectiveness of a combined fluoride mouthrinse and fissure sealant programme. *Journal of the Irish Dental Association* 37 38-40

Abstract

A preventive programme was carried out amongst primary school children living in a non-fluoridated area in which a fortnightly fluoride mouthrinse, combined with a fissure sealing programme, was found to significantly reduce the incidence of dental caries over a two year period. The cost of the programme was high when compared with fluoridation of water supplies.

Graham, O'Connor and Holland (1998): Audit of 100 patients with dental trauma. *Journal of Dental Research* 77 1290

Abstract

Dental trauma is a common and often distressing problem requiring immediate and long-term management. This study of 100 patients with dental trauma is part of an ongoing clinical audit conducted by the Department of Preventive and Paediatric Dentistry, University Dental School and Hospital, Cork. The following information was recorded for each patient: sex, age at time of trauma, when and where trauma occurred, cause and exact nature of trauma, and initial dental management. The age range of the 100 patients (59 male, 41 female) was 6 to 48 years of whom 52 were aged 6-11 years. 44 injuries occurred from July to September. 43 injuries occurred on a public road, 24 at home, 18 at sports grounds, 10 at school, 5 in other areas. Falls accounted for 40% of injuries, bicycle accidents 22%, sports related 22%, assaults 7%, R.T.A.s 4%, other causes 5%. The commonest injuries were crown fractures (57 patients), luxations (37), avulsions (34), subluxations (16), root fractures (13), crown root fractures (4) and concussion (4). The commonest initial treatment was repositioning/reimplanting (53 patients) and splinting (62). Antibiotics were prescribed to 48 patients. It can be concluded that dental trauma affects mainly young male children, most often in July - September. Most injuries occurred during normal daily activities, so that scope for prevention of dental trauma is very limited.

Graham, Whelton and O'Mullane (1998): Study of the oral health of school children of the Irish traveller community. *Journal of Dental Research* 77 707

Abstract

Mortality and morbidity rates for the Irish Traveller community are known to be higher than those for the general Irish population. However, little is known of the dental status of this minority group. In this study, the oral health of 303 Irish Traveller schoolchildren (age range 4-13 years) was assessed. The subjects were divided into three age groups: group 1 aged 4-6 years (N=85), group 2 aged 7-9 years (N= 116), group 3 aged 10-13 years (N=102). The mean dmft score for group 1 was 2.7. The mean DMFT scores for groups 2 and 3 were 0.9 and 2.3 respectively. The percentages caries free was 41.2% (group 1), 55.2% (group 2) and 24.5% (group 3). Only 21.6% of group 2 and 39.2% of group 3 had fissure sealant(s) present. 30.9% of males and 8.5 % of females in group 3 had evidence of dental trauma. Evidence of fluorosis in groups 2 and 3 combined, using Dean's Index, was as follows: 81.5% normal, 11.1% questionable, 5.8% very mild, and 1.6% mild. When compared with other dental surveys on schoolchildren of the general population, the results show that Irish Traveller schoolchildren have poorer oral health. This study was supported by the Health Research Board.

Hannigan, O'Mullane and Barry (1998): Caries experience of tooth surfaces in a 3-year caries clinical trial. *Journal of Dental Research* 77 1289

Abstract

Individual tooth surfaces have vastly different susceptibilities to caries. The aim of this study was to investigate the caries experience of tooth surfaces in a 3-year caries clinical trial and to order the tooth surfaces, starting with the surface which experienced the most decay. The study used the data from a 3-year caries clinical trial (O'Mullane et al., J.

Dent. Res., 1984, 73 SI : 272) in which 4,196 subjects aged 12-15 years, participated. Data on up to 140 surfaces was recorded for each subject. Surfaces which were already decayed or filled at the baseline examination were excluded. The occlusal surfaces of the first and second molars experienced the most decay during the trial with the percentage of these surfaces decaying or being filled varying from 16.4 to 33.3 percent. These surfaces accounted for over a third of the decay or fillings recorded during the trial. Almost half of the 140 surfaces examined in the trial experienced less than one percent decay. Of the 531,186 surfaces which were recorded as sound at the start of the trial, 97% remained sound during the trial. This study concludes that the occlusal surfaces of first and second molars experienced the most decay during the clinical trial, accounting for one third of all decay or fillings recorded.

Hewson, Murray and McNamara (1997): Galway cleft lip and palate children 1980-1995-epidemiology. *Journal of Dental Research* 76 1156

Abstract

The aims of this study were to identify children born in Galway with Cleft Lip/Palate since 1980, to assess their dental and orthodontic needs and to identify their access to surgical and speech pathology, care. Information was obtained from the two paediatric departments, the single plastic surgeon, the speech pathology department and orthodontic department servicing the county. Patients were examined clinically and where appropriate, radiographically. A questionnaire of the past medical and dental care was recorded for each patient. 53 children were identified of which 41 were examined. There were 21 males and 20 females. 68% (28) had CL/P while 32% (13) had CP. The mean age was 10.45 years. The annual incidence was 1.12 per 1000 live births, with no cases identified in 1992 and 1993. Family history occurred in 34% (14). Six surgeons were involved, with 20 the maximum number of cases under the care of a single surgeon. One surgeon treated one patient. The mean DMF was 1.9 and the mean dmf was 3.22. 5% (2) were referred to a dentist at 6 months. The average age of a first dental visit was 4.5 years, with 9 years the oldest recorded. 68% (28) had a Class I malocclusion, 10% (4) Class II and 22% (9) Class III. 75.6% (31) had been referred to a speech pathologist. The large number of surgeons involved, the small number of early referrals for dental care and the high DMF amongst this small group of patients reflects the need for better intra and inter disciplinary communication and co-operation.

Hewson, McKiernan, Newson, Butler, McNamara, Moran and Garvey (1995): A study of cleft lip and palate children in Mayo. *Journal of Dental Research* 74 950

Abstract

This was a preliminary clinical study of children with Cleft Lip/Palate anomaly in County Mayo. The aim of the study was to identify children in the County with a cleft lip/palate anomaly, assess their dental and orthodontic needs, and to investigate their overall management. Twenty-nine children were identified: 20 boys and 9 girls. Two boys were not included in the study as they were mentally retarded. The age ranged from 12 months to 15 years. The family history was relevant in 4 cases. All types of cleft defect were recorded, ranging in expression from incomplete cleft lip to complete bilateral cleft lip and palate. The most common cleft type was cleft of palate only, occurring in 11 children. In the 6 complete unilateral cleft lip and palate cases, 4 were left sided. Early childhood

respiratory and ear infections were common. Two children had significant medical histories with serious cardiac, ocular and skeletal problems. Surgical repair of the clefts was carried out in six different centres. With the appointment, four years ago, of a plastic surgeon to the Western region, this trend is changing with most infants now treated in Galway. Lady's Hospital for Sick Children remains the preferred paediatric referral, for children requiring specialised paediatric care. Dentally, the DMF was higher in the primary dentition. With the establishment, in the last 12 months, of an early dental referral system from the paediatric department in Castlebar Hospital, this trend is changing. Orthodontic malocclusions ranged from significant Class II division 1 to Class III malocclusions. Dental anomalies (malpositions, hypodontia, dilaceration, hypoplasia) were common in the maxillary incisor region.

Holland and O'Mullane (1990): The organisation of dental care for groups of mentally handicapped persons. *Community Dental Health* 7 285-293

Abstract

One hundred and eighty-nine mentally handicapped persons attending both residential and non-residential institutions were examined during 1984/85. All were assessed for treatment need for caries; periodontal need was also assessed in 43 of the older patients. At base-line examination it was found that a high proportion of the dental caries remained untreated and most of the treatment that was provided consisted of extractions. Treatment was subsequently provided by a health board dental officer, junior hospital staff, final year undergraduate students or a consultant in paediatric dentistry. Most treatment requirements were met by the non-consultant personnel. A follow-up examination completed during 1987 showed a considerable improvement in the treatment of caries; periodontal treatment need remained unchanged. It can be concluded from this study that it is feasible to set up an effective dental service for mentally handicapped groups, that improvements in the treatment of dental caries can be achieved in a relatively short period of time and that most treatment requirements can be met by non-consultant staff. Continuing care, particularly for periodontal disease, remains a problem.

Holland, O'Mullane and Whelton (1994): Accidental damage to incisors amongst Irish adults. *Endodontics and Dental Traumatology* 10 191-194

Abstract

Evidence of accidental damage to permanent incisor teeth was recorded as part of a national survey of adult dental health in Ireland. A total of 746 adults aged between 16 and 34 years were examined. The prevalence of injury was considerably higher in males and the majority of subjects in both sexes had just one tooth affected. There was a continuing increase in prevalence with age which appeared to level out after the age of 24. A high level of untreated injuries was noted in both age groups; of those injuries which were treated, composite restorations were more common in the younger age groups while extraction and replacement by a denture was more common in older subjects.

Holland, O'Mullane, Whelton, Murphy and Creedon (1995): The prevalence of enamel opacities in fluoridated and non-fluoridated communities in Ireland. *Journal of Dental Research* 74 950

Abstract

Over the past 10 years, results from various studies throughout the world have shown that using the DDE (Developmental Defects of Enamel) Index, diffuse opacities tend to be associated with an increased exposure to fluoride. The present study was undertaken in association with an evaluation of a fluoride mouthrinse programme in Co. Waterford. The aim of the study reported in this presentation was to measure the prevalence of diffuse opacities in 12- and 16- year old lifetime residents of fluoridated and non-fluoridated communities. A total of 155 12-year olds and 125 16-year-olds were examined in the non-fluoridated community and 123 12-year-olds and 73 16-year-olds in the fluoridated community. Subjects were examined by one of the authors (P.C.) using the screening version of the modified D.D.E. index (Clarkson, J. and O, Mullane, D.M. J. *Dent. Res.* 68, 445-450, 1989) in which the buccal surfaces of 8 index teeth were assessed. Tooth surfaces were not dried. For 12- year-olds in the non-fluoridated area, 28 subjects (18.0%) had diffuse opacities recorded compared with 51 (41.5%) in the fluoridated area ( $X^2=18.46$ ,  $p<0.001$ ). At age 16 years, 22 subjects (17.6%) in the non-fluoridated area had diffuse opacities compared with 20 (27.4%) in the fluoridated area ( $X^2 =2.65$ ,  $p=0.10$ ). It is concluded from this study that the prevalence of diffuse opacities tends to be higher in fluoridated communities. Supported by a grant from the Health Research Board (Ireland).

Holland, Whelton, O'Mullane and Creedon (1995): Evaluation of a fortnightly school based sodium fluoride mouthrinse 4 years following cessation . *Caries Research* 29 431-434

Abstract

The aim of this study was to investigate the effectiveness of a school-based fortnightly 0.2% sodium fluoride mouthrinse programme after children ceased to participate. The programme, which commenced at age 6 and ceased at age 12, was investigated 4 years following its cessation. Three groups of 12-year-olds and three groups of 16-year-olds were examined, i.e. children who had participated in the mouthrinse, those attending non-participating nearby schools and lifetime residents of a fluoridated community. Significant differences in mean DMFT in the 12-year-olds between the mouthrinse and the control group were not found in the 16-year-old group. Mean DMFT for the mouthrinse group and those in a fluoridated community (which were the same in 12-year-olds) showed a statistically significant difference in those aged 16. Most caries found, both in 12-year-olds and in 16-year-olds, occurred on molar teeth and was found on pit and fissure surfaces. The cessation of these programmes at age 12 should be reappraised and the combination of school-based fluoride mouthrinse programmes with a fissure sealing programme is recommended.

Holland, Lucey, Kavanagh and O'Mullane (1997): Costs in providing dental treatment for severely handicapped patients under general anaesthesia. *Journal of the Irish Dental Association* 43 72-75

Abstract

The cost of providing dental treatment for severely mentally/physically handicapped patients under general anaesthesia in a specially designed unit are investigated in this study. The costs involved in the provision of such treatment were found to be high at 613 IR Pounds per patient. It is recommended that the full potential of primary care services for handicapped patients be developed in order to reduce the use of these necessary, but expensive secondary care facilities. It is also recommended that such facilities should be shared with other services in order to reduce overall costs.

Jones (1992): Dental epidemiological survey of 5-year-old schoolchildren in Kerry 1992. Southern Health Board Report, Southern Health Board

Abstract

This study provides data on 5-year-old schoolchildren in County Kerry. Examinations were carried out using diagnostic criteria described by Palmer, Anderson and Downer (1984) and in order to ensure as much standardisation with the British Association for the Study of Community Dentistry (BASCD) co-ordinated studies as possible, a copy of the protocol for studies on 5-year-old children in Wales 1991/92 was obtained and closely followed. A total of 830 children from the estimated 5-year-old population of 2270 in Kerry were examined in this point prevalence caries study which was designed to investigate district variations in attendance patterns, service use, toothache and general anaesthetic experience and parental knowledge of caries prevention. In addition, a double blind study on the examined children attending national schools in fluoridated and non-fluoridated areas was carried out and a comparison drawn between Kerry 5-year-old schoolchildren in 1992 and similar aged children examined by the researcher in Gwynedd in 1989/90. The results indicate that there is an apparent improvement in caries levels of County Kerry's 5-year-old schoolchildren from levels estimated for approximately the same age group in the Southern Health Board in the National Survey of Children's Dental Health study in 1984. However, in comparison to children in the Gwynedd 1989/90 study, Kerry children have a higher caries experience, far more untreated disease, little restorative care and very poor attendance patterns. These findings, together with an apparent lack of caries prevention knowledge amongst parents, calls for the establishment of a policy of conserving carious teeth in young children when possible and primarily an expansion of dental health promotion. There is statistical evidence that children attending national schools in fluoridated areas have experienced less caries than those attending schools in non-fluoridated areas which vindicates the fluoridation programme in County Kerry.

Keane, O'Mullane and Whelton (1994): An investigation into oral health attitudes and behaviour among edentulous Irish adults. *Journal of Dental Research* 73 876

Abstract

A survey of The Oral Health of Irish Adults (O'Mullane, D. and Whelton H, Stationery Office, Dublin, 1992) showed that of 1,927 subjects, 277 (14.4%) had no natural teeth remaining. The aim of this presentation is to present data on the behaviour of, and

attitudes to, denture wearing among this group of edentulous Irish adults. As part of the study, the 277 edentulous subjects aged 16 years and over completed a questionnaire that included questions on their denture wearing habits, oral health behaviour and attitudes. 2.6% of subjects did not possess a denture of any kind, 6.39% possessed a full upper denture only, and 0.7% possessed a lower denture only. Thus, 9.6% of edentulous Irish adults examined did not possess a full (upper and lower) set of dentures. With regard to the appearance of their dentures, 42.2% of subjects expressed dissatisfaction and 44.7% were dissatisfied with the comfort/fit of their dentures. Dissatisfaction with both appearance and comfort/fit was expressed by 31.9% of subjects. Of those possessing medical cards, 48.3% of edentulous subjects were dissatisfied with the appearance of their dentures, compared with 34.0% of those who did not have a medical card ( $\text{Chi}^2=4.6$ ,  $P=0.03$ ). Similarly 53.0% of edentulous medical card holders were dissatisfied with the comfort/fit of their dentures, compared with 33.3% of those who did not have a medical card ( $\text{Chi}^2=872$ ,  $p=0.003$ ). A high proportion of edentulous Irish adults are dissatisfied with the appearance and/or comfort/fit of their dentures. Dissatisfaction tends to be higher among medical card holders.

Keane, Foley, Crowley and McNamara (1998): Molar status of recently referred orthodontic patients. *Journal of Dental Research* 77 1285

Abstract

The aim of this prospective study was to investigate the molar status of patients presenting for orthodontic assessment who had little or no delay between the time of referral and the orthodontic assessment appointment. A total of 274 patients in this category were examined, 125 males and 149 females. No radiographs were used. The mean age was 13 years with a range of 11 - 15 years. The patient's gender, medical history, past dental history, molar DMF and molar fissure sealant status were recorded. The mean molar DMF was 2.3 with a range of 0 - 8. The mean molar DMF was higher for males (2.5) than females (2.18). Only 76 patients (27%) had a zero molar DMF and within this group 45 (59.2%) had received fissure sealants. Overall, 147 patients (54%) had received fissure sealants. Of those patients with a history of decay in the first molars, only 10.6% had received fissure sealant in the second molars. A total of 103 (37.6%) required referral for restorative care prior to orthodontic treatment. At the time of orthodontic referral, and again at orthodontic assessment, patients are advised that they must be dentally fit. Despite this almost 40% of recently referred patients required restorative treatment prior to commencing orthodontic treatment.

Kirrane, Egan, Gallagher, Ahmed, Hayes et al (1998): An assessment of a preventive strategy at work in the community. *Journal of Dental Research* 77 1289

Abstract

A range of dental health programmes is ongoing in the Community Dental Service. These programmes incorporate dental health schemes that are fundamental to dental health prevention and promotion. This study attempted to evaluate the CREST programme, an oral health education scheme currently in operation in the Eastern Health Board. Three hundred and eighty-six children from primary and secondary schools participated in the study. The sample was subdivided on the basis of current or previous involvement of the children in the CREST programme. A questionnaire was used to

evaluate the children's level of dental knowledge. The questionnaire composed of 12 questions was divided into three categories for the purpose of analysis. Results were analysed using a Chi-square test. Except for knowledge relating to toothbrushing at primary school level ( $p < 0.1$ ), no significant difference was found between the groups level of dental knowledge, with overall mean percentage scores of 70% and 66% being achieved by the CREST and non-CREST groups respectively. However, the study recognised both its own limitations and the multifactorial nature involved in the assimilation of health education. Recommendation: in the absence of more intensive and frequent evaluations, such health education systems should remain an integral component of the national health strategy.

Lynch and Burke (2000): The outcome of primary endodontic therapy in Cork dental hospital. *Journal of Dental Research* 79 1230

Abstract

The purpose of this study was to audit the factors that may influence the sequelae to primary endodontic therapy (pulpal debridement). The sample for this study was patients who presented in the Casualty Department of the Cork Dental Hospital in 1993. The case notes for each patient were reviewed and demographic and dental factors, such as age, gender, tooth, and month in which treatment commenced, were recorded. The results were then analysed. Of 242 lesions (in 188 patients), 93 (38%) opted for definitive endodontic treatment in the Restorative Department in Cork Dental Hospital, 25 (10%) had the tooth extracted after the primary treatment, and 124 (52%) did not return to the hospital for any further treatment; 28% of molars were extracted after primary treatment, compared with 11 % of premolars and only 3% of incisors ( $p < 0.01$ ); 47% of incisors continued with definitive treatment in the Restorative Department compared with 31% of premolars, and 28% of molars ( $p < 0.01$ ); 51 % of lesions in patients up to and including the age of 39 years did not return for further treatment, compared with 33% of lesions in patients over the age of 39 years ( $p = ns$ ); Males (57%) were more likely than females (47%) not to return for any other treatment ( $p = ns$ ). An average of 75% of lesions did not return for further treatment during the months April to July (64% (May) - 84% (June)). In August, when the academic year recommenced, only 28% of lesions did not return ( $p < 0.01$ ). It was found that a high percentage of lesions, 52%, did not return for treatment after primary endodontic therapy of those lesions, there was a significant variation with tooth type and month of initial therapy. The assistance of the Health Research Board, who provided funding for this project, is acknowledged.

MacNeill (1990): Regional variation in dental caries levels in Irish children. *Journal of the Irish Dental Association* 36 143-145

Abstract

This paper looked at the findings of the 1961-63 survey of schoolchildren living in Ireland and attempted to find a cause and effect correlation between a carboniferous environment and a lessened caries experience. Findings: a significant negative correlation was found between percentage of carboniferous stone and the prevalence of decayed, missing or filled teeth.

McAleer and Dalton (1998): A comparison of children's oral health status in dissimilar socio-economic groups. *Journal of Dental Research* 77 1289

Abstract

A study of the oral health status of lower (categories C/D) and higher (categories A/B) socio-economic (SES) 12-year-old children was undertaken. The aim of the study was to investigate the oral health status of two different SES groups of 12-year-old children. The survey involved a collective sample of 214 sixth class primary schoolchildren; 118 were from the C/D SES group and 96 from A/B SES group. The children were examined for dental caries using the decayed missing and filled index (DMFT), periodontal status (CPITN) and the presence or absence of fissure sealants. Data collected showed an overall DMFT of 1.3 for the group C/D and 0.9 for the group A/B. Fifty-seven (48%) of the C/D group had a maximum CPITN score of healthy in contrast to 73 (76%) of the A/B subjects. Thirteen (14%) of the lower SES group presented with fissure sealants in contrast to 61 (52%) of the higher SES group. Taking into account the limitations of the restricted sample size in the study, the results may reflect difference in knowledge, attitude and behaviour between these two SES groups. These differences may be reflected in a difference in the uptake of services

McCartan, Freeman and Harrison (1996): Patterns of attendance and treatment at an emergency dental clinic. *Journal of the Irish Dental Association* 42 27-28

Abstract

One month's activity audit was carried out at Dublin Dental Hospital Accident and Emergency Department to confirm an increase in attendance and to ascertain the reasons for attendance and the patterns of treatment. 966 patient attendances were recorded and 985 had retrievable records. The mean daily attendance was 44 patients. 48% were entitled to free treatment. 79% were self-referred. 72% complained of pain. Many first time attenders had no complaint of an emergency character.

McGrath (1998): Oral cancer prevalence among older people attending Irish dental hospitals. *Journal of Dental Research* 77 1288

Abstract

Levels of oral cancer in the Irish population appear to be relatively high in comparison to its Northern European neighbours. The aim of this retrospective study was to document the levels of oral cancer among elderly patients attending dental hospitals in the Republic of Ireland. The dental records of all elderly (over 65 years) patients attending either of the two dental hospitals during the calendar year 1995 were examined by the author. Details of gender, age, area of residency, edentulous status and biopsy confirmation of the presence of oral cancer were recorded for this sample. Five hundred and twenty-four patients' records were examined (93%). Oral cancer was confirmed in 20 patients (3.8% of the study group). Higher levels were found among men and the edentulous. Nine of the patients (45%) diagnosed with oral cancer were resident outside Dublin and Cork. Oral cancer levels among older people attending the dental hospital are high. Health care planners should ensure that access to specialist dental services is available for all risk groups and especially elderly edentulous men resident outside the two major cities.

McGrath, Gilhorne and Bedi (1998): Compounding inequalities in the oral health status of older women living outside Dublin. *Journal of the Irish Dental Association* 44 106-109

Abstract

The Irish population is ageing with an increase in the absolute number of older people. However, there is a deficiency of information on the oral health status of older people in the Republic of Ireland. Traditionally, the primary measure of oral health status in older populations has been the prevalence of edentulousness. The aim of this retrospective study was to obtain information on the edentulous status of older people and to investigate the compounding effects of age, gender and area-of-residency on the prevalence of edentulism, using as a sample those over 65 year-olds who registered at dental hospitals in the Republic of Ireland during 1995. All patient records from both dental hospitals in the Republic were identified on electronic databases, and information was collected over a period of six months. Of the 566 patients who registered at the dental hospitals in 1995, it was possible to access 524 (93 per cent) records. The edentulous rate in the sample was 42%, but significant variations were apparent with age, gender and geographical residency. In addition, there was evidence of compounding inequalities in the prevalence of edentulism when the combined effects of age, gender and area of residency were studied. Considerable inequalities were observed; at age 65, women resident outside Dublin were 1.65 times more likely (or 65 per cent more likely) to be edentulous than men resident in Dublin of the same age. At age 75, women were 1.46 times more likely to be edentulous than men.

McLoughlin, O'Mullane and Whelton (1998): Dental Caries levels amongst children and adolescents in the North Eastern Health Board. *Journal of Dental Research* 77 1286

Abstract

Included in the 4-year action plan for dental services outlined in "Shaping a Healthier Future" (Department of Health, 1994) is the establishment of a standardised database in each of the eight health boards. With this in mind the North Eastern Health Board (NEHB) carried out a survey of the oral health of children and adolescents in 1995. Representative samples in the three community care areas in the NEHB namely, Cavan/Monaghan, Louth and Meath were selected. A total of 2,540 subjects were clinically examined for caries using WHO diagnostic criteria. There has been a substantial reduction in mean DMFT levels since 1994 amongst 8-, 12- and 15-year-olds with no change in dmft levels amongst 5-year-olds. The 1995 data show a wide variation in caries levels between the three community care areas. For example, the mean DMFT amongst 12-year-old residents of non-fluoridated communities in Cavan/Monaghan, at 1.7, was over twice that found amongst 12-year-old residents of fluoridated communities in Co Louth at 0.8. Similar variations in caries levels of 5-, 8- and 15-year-olds were apparent. Whilst there is a general reduction in caries levels of children and adolescents in the NEHB over the last 11 years, considerable variation exists among areas within the Board.

McNamara, Field, Crowley and Fitzpatrick (1998): Eastern Health Board; outcome of orthodontic assessments. *Journal of Dental Research* 77 702

Abstract

Resources for Public Health Service orthodontics in the Republic of Ireland are limited. The aim of this study was to identify the uptake and outcome of orthodontic assessments in the Eastern Health Board Region over the past 15 months. The study was retrospective. All patient registration data was investigated. 7,318 patients presented for orthodontic assessment; 3,263 (44.59%) males and 4,055 (55.41 %) females. The mean age was 14.07 years, with a range from 1 to 26 years. 2,203 were deemed ineligible for treatment. Of the 1,631 (22.29%) who did not attend (DNA), 792 (48.56%) were male and 839 (51.44%) female. For those who cancelled, 290 (46.4%) were male and 335 (53.6%) female. 1,532 (20.93%) had medical cards. The most common malocclusion type was Class II div 1, 2,373 (32.43%), followed by Class I, 1,976 (27%). 2,165 (30%) were deemed ineligible for orthodontic care through the Public Health Services. In conclusion, 31% of patients given orthodontic assessment appointments DNA'd or cancelled. Factors influencing the uptake of orthodontic assessment appointments need investigation. The significant number of patients deemed ineligible suggests that the current orthodontic assessment waiting list requires validation.

Mercer (1990): Oral cancer mortality in the Republic of Ireland 1979-1986. *Journal of the Irish Dental Association* 36 139-142

Abstract

A descriptive study of oral cancer mortality in the Republic of Ireland is presented. The aim was to collate the data on oral cancer deaths (ICD9 140-146, 149) from the Department of Health Reports on vital statistics for the years 1979-86 and determine the numbers, sex distribution and rates. The annual number of oral cancer deaths represented a very small proportion of cancer deaths and all deaths. Deaths due to neoplasms of the tongue were the most common. Males had greater oral cancer death rates than females; death rates increased with age; two thirds of the deaths occurred over the age of 64 years. Age adjusted oral cancer death rates showed no significant change in male or female rates between 1979 and 1986.

Mercer (1992): Dental behaviour, knowledge and symptoms of women attending antenatal classes in Sligo. *Journal of Dental Research* 71 1025

Abstract

The aim of this study was to obtain data on behaviour, knowledge and symptoms, relating to dental health, of women attending ante-natal classes in Sligo/Leitrim with a view to developing a dental health promotion programme. A questionnaire was distributed to the 55 women who attended ante-natal classes in the last quarter of 1987 and 32 completed questionnaires were returned. 100% reported brushing their teeth at least once a day, 50% never flossed and 56% ate sweet snacks only once a day; 75% thought their teeth healthy and 56% reported bleeding gums. Knowledge on factors affecting dental health was generally good; 78% thought brushing with fluoride toothpaste can reduce caries, 97% thought sweet snacks harmful to children's teeth and 75% thought the same of bottle feeding with sweet drinks after the age of one; only 41% thought fluoridated water affected the teeth and 91% thought that a mother loses calcium from her teeth during

pregnancy. It is concluded that these data suggest that a dental health education input to improve the effectiveness of tooth brushing and to motivate implementation of knowledge on maintaining children's dental health could be of benefit at ante-natal classes. A survey of a more representative sample of expectant mothers should be undertaken.

Mercer (1994): Dental caries in 5 and 12 year olds in counties Sligo and Leitrim in Ireland 1991. *Journal of Dental Research* 73 876

Abstract

The aim of the study was to measure the levels and prevalence of dental caries in 5 and 12 year olds in Sligo/Leitrim. Simple random samples were selected from National School children in Junior Infant, and Sixth Standard classes to give data on 5 and 12 year olds respectively. The diagnostic criteria used were those of the National Survey of Children's Dental Health 1984. Caries was diagnosed at the cavitation level, no radiographs were taken. The examinations were carried out by the author who had been an examiner in the NSCDH 1984. In 5 year olds, in primary teeth, the mean dmft was 1.6 (95% CI 1.3 to 1.9), on average 87% of affected teeth were untreated and 10% were extracted; 52% of children were caries free. In 12 year olds, for permanent teeth, the mean DMFT was 1.8 (95% CI 1.6 to 2.1), on average 16% of affected teeth were untreated and 73% were restored; 35% of children were caries free. In 12 year olds the mean DMFS was 3.0 for permanent teeth, 87% of affected surfaces were on first permanent molars. It is concluded that the levels and prevalence of dental caries are low in both 5-year-olds and 12-year-olds.

Murphy, Whelton and O'Mullane (1995): Prevalence of TMJ dysfunction syndrome in Irish adults. *Journal of Dental Research* 74 952

Abstract

In 1989/90 a national survey of the oral health of Irish adults was conducted. We report here on the prevalence of Temporomandibular Joint Dysfunction Syndrome (TMJ), which was assessed on the basis of presence or absence of three diagnostic criteria; limitation of opening, click (present at exam or reported by subject) or pain. Only 26 (1%) of the 1,774 subjects assessed reported pain, of whom 23 also reported click. Click was recorded in 460 (26%) subjects, and was more common amongst females (28%) than males (22%) ( $p=0.004$ ). In the older age groups (45+) similar proportions of edentulous (21%) and dentate subjects (24%) had click: it was most common in the 25-34 (32%) and 35-44 (29%) year old age groups in which most subjects (98%) were dentate. The remaining results refer to the dentate population of the 25-44 year olds ( $N=731$ ). The prevalence of click was similar amongst those with <20 teeth and those with 20+ teeth, at 33% and 30% respectively. It was slightly more common in those possessing upper partial dentures; 34% of those with an upper partial denture had click compared to 28% of those with a full upper denture and 30% of those with no upper denture. This difference was not statistically significant ( $p=0.53$ ). Limitation of opening was more common amongst those with click. The maximum opening was  $\leq 4$  cm in 33%, between 4-4.5 cm in 40% and  $>4.5$  cm in 28% of subjects with click, compared to the corresponding figures of 25%, 51% and 23% for those without click ( $p=0.02$ ). Clicking of the TMJ was more common amongst women than men.

Mid Western Health Board (1997): Survey of oral health of children and adolescents in the Mid Western Health Board 1997. Mid Western Health Board Report  
Abstract

The government health strategy, "Shaping a Healthier Future" identified the establishment of a standardised database on oral health status as one of the goals for the oral health services. This survey of the oral health status of children and adolescents in the Mid-Western Health Board area is a response to that goal. The results of this survey are also a measurement of the oral health gain achieved over the years 1961 to 1997. In other words, this survey is a scientific measurement of the effect on oral health of the various activities that comprise the oral health services.

These data offer;

- ongoing monitoring of the effectiveness of oral health services
- better identification of needs to be addressed
- information for planning of specific strategies to address these needs.

The survey also assessed the knowledge, attitudes and behaviour of some of the participants about factors that affect oral health and the uptake of the existing oral health services.

#### Findings

Since 1961 in Limerick, 1962 in North Tipperary and 1963 in Clare, there has been a considerable decrease in tooth decay levels amongst 5, 8, 12 and 15-year-olds. Children who live in areas with water fluoridation have less decay than those in non-fluoridated areas. Of those children living in non-fluoridated areas, those using fluoride mouthrinses have less decay than those not using fluoride mouthrinses. Over half of all 12-year-olds and approximately two fifths of all 15-year-olds need instruction in toothbrushing. This can be carried out by dental hygienists. Over one in three 15-year-old males damaged their front teeth due to trauma. Less than one in four females of the same age had damaged front teeth. Most 8 and 15-year-olds brush their teeth at least twice a day. Frequent consumption of sweet snacks between meals, which can cause dental decay, is common, particularly amongst 15-year-olds.

NEHB (1995): Oral health of children and adolescents in the North Eastern Health Board 1995. NEHB Report

#### Abstract

The health strategy "Shaping a healthier future" contains as one of the goals for the oral health services the need to establish a standardised database on oral health status. This survey of the oral health status of children and adolescents in the North Eastern Health Board is a response to that goal. The results of this survey are also a measurement of the oral health gain in the oral health services. In other words, this survey is a scientific measurement of the effect of the various activities that comprise the oral health services. This measurement of oral health gain is of great significance for the management of the oral health services in the region as it makes it possible to devise specific strategies to address real oral health needs. This survey also measured the knowledge attitudes and behaviour of some of the participants about factors that affect oral health and the uptake of the existing oral health services.

Findings;

- Since 1984, there has been a considerable drop in tooth decay levels in permanent teeth of 8, 12 and 15-year-olds in the North Eastern Health Board. There has been no improvement in tooth decay levels in the baby teeth of 5-year-olds.
- Children who live in areas with water fluoridation have less decay than those in non-fluoridated areas.
- Since 1984, there has been an improvement in the dental treatment services for 8- and 12-year-olds, as fewer permanent teeth are untreated.
- Almost half of all 12- and 15-year-olds need help with toothbrushing and professional cleaning of their teeth. All of this treatment can be carried out by dental hygienists.
- More than one half of 15-year-olds said they would like orthodontic treatment even though they did not, in the dentist's opinion, need it.
- Frequent consumption of sweet snacks between meals is common, particularly in 15-year-olds.
- One in seven 15 year-old boys has damaged their front teeth due to trauma compared with one in 14 girls of the same age.

Neville, O'Mullane, Whelton and Murphy (1998): European Oral Healthcare Systems - their structure and oral health outcomes. *Journal of Dental Research* 77 1290

#### Abstract

Health care systems are increasingly being reviewed in terms of their effect on the health of those eligible for treatment under their care. However, the methodology to establish direct links between system characteristics and health outcomes has not been fully developed. The aim of this project is to formulate recommendations for standardised oral health system protocols incorporating components which promote good oral health. In this study an analysis of the main third party funded system in operation in seven European countries was undertaken. The systems were compared using agreed input and outcome measures and were examined in respect of the economic and demographic background, the administration of the system and the experiences and opinions of the dentists and patients of the system. Clinical data were collected from small convenience samples in each country for 20-24 year-old and 35-44 year-old adult users of the system. Interim results were presented in 1996 (Quintessence in press). The final analysis shows that the mean number of natural teeth present varied from 24.1 in Germany to 27.7 in Denmark for 35-44 year-olds whilst the percentage in this age group who had at least 18 sound untreated teeth ranged from 12 percent in Germany to 60 percent in Spain. The percentage with one or more crowns ranged from 13 percent of 35-44 year-old Spanish patients to 81 percent of patients in the same age group in France.

This study provides valuable information on the different levels of oral health in patients of third party funded systems in seven EU countries. Further modelling of the data is required to allow the oral health outcome to be linked to specific system characteristics.

O'Dowling (1997): Oral surgery demands of a regional orthodontic unit. *Journal of the Irish Dental Association* 43 10-11

#### Abstract

The orthodontic records of patients attending a Regional Orthodontic Unit, and who were referred for specialised oral surgery procedures were examined. From January 1995 to December 1995, 22 patients were referred for treatment. The majority of these patients

required exposure or extraction of unerupted maxillary canine teeth. Over 77% of patients requested this treatment through the Public Health Service resulting in long waiting lists developing for receipt of treatment.

O'Dowling and McNamara (1990): The congenital absence of permanent teeth amongst Irish school children. *Journal of the Irish Dental Association* 36 136-138

Abstract

The Orthodontic records of 3,056 patients attending a Regional Orthodontic Unit were examined, to assess the prevalence of hypodontia. Orthopantomogram radiographs were available for all patients. The congenital absence of third molars was not considered. The prevalence of hypodontia was 11.3%, which was high in comparison with previous studies. However, it was in keeping with more recent studies from the U.K. and Ireland.

O'Dowling and O'Mullane (1995): Orthodontic treatment need in the Southern Health Board. *Journal of the Irish Dental Association* 41 38-41

Abstract

An assessment of the orthodontic treatment need among a group of 6th Class pupils in the Southern Health Board area was carried out. It was found that 25.4% of these children had malocclusions severe enough to be offered treatment according to the Guidelines issued by the Department of Health. Two-thirds of these patients would require the use of fixed appliance orthodontic treatment.

O'Keefe (1991): Children's dental health in 8 primary schools in South Co. Meath 1988. *Journal of the Irish Dental Association* 37 48-50

Abstract

A study of caries prevalence in a high selenium area in County Meath was carried out in 1988. A secondary aim of this study was to gather information that might be useful in planning of dental services in the county. For the purpose of this latter aim, 425 children in junior infants, 2nd and 6th standards were examined. The study consisted of clinical examinations, questionnaires and analyses of water samples for fluoride content. Caries prevalence in County Meath was very low, a finding consistent with the results of previous national surveys. Most of the caries in the permanent teeth was in the pit and fissure surfaces. Periodontal treatment needs were minor and confined to oral hygiene instruction and simple scaling. A preventive programme of sealants and dental health education conducted by auxiliary personnel would be beneficial in reducing further the dental disease levels in primary school children.

O'Leary (1994): Aids - the future attitudes and behaviours of European Dental Students. *Journal of Dental Research* 73 878

Abstract

Previous studies have shown that many dentists worldwide are reluctant to treat patients infected with the HIV virus. Whilst dentists' views have been well documented, little is known about the future attitudes of dental students in relation to treating AIDS patients. This study was undertaken to determine whether final year students would treat patients in each of the following cases: suspected HIV or HIV patients, patients with ARC and full AIDS patients. A questionnaire was distributed to European final year dental

students. Results have shown that a majority would recommend that suspected HIV patients be tested prior to treatment, and more than 50% would refuse treatment if the patient refused this test. Respondents admitted to having a responsibility to treat HIV patients yet would prefer not to treat them. Many didn't know when to refer patients for medical (non-dental) problems, didn't feel they had the skills to treat the oral manifestations of HIV and hadn't seen a HIV patient in the dental surgery. Almost half believed they had been sufficiently educated with regard to HIV. A minority would continue to employ a HIV infected staff member and would continue to practice if they themselves were infected; and a sizeable majority would declare their HIV infection to the dental authorities if doing so meant that they would no longer practice dentistry. A majority of students claimed that in their future careers they would not treat patients for minor oral surgery procedures in suspected cases, HIV, ARC and AIDS cases. Periodontal treatment was found to be the next most avoided procedure, whereas an overwhelming majority would treat prosthodontic patients and patients requiring conservative treatment. It is concluded that European students, when qualified, will show a marked reluctance to treat suspected HIV, ARC and AIDS patients.

O'Mullane (1982): Changing patterns of dental caries in Irish schoolchildren between 1961 and 1981. *Journal of Dental Research* 61 (Sp Iss) 1317-1320

Abstract

The prevalence of dental caries in Irish school children was determined in 1961-1965. Data collected in 1979-1981 show a large decrease during the intervening period. Apart from fluoridation of water supplies and increased sales of fluoride toothpastes, information on other variables that may have contributed to this decrease is not available.

O'Mullane (1995): Systemic fluorides. *Advances in Dental Research* 2 106-109

Abstract

Fluoridation of domestic water supplies has been shown to be effective in reducing the prevalence of dental caries in numerous studies conducted world-wide over the last 50 years. The most widely used systemic alternative to water fluoridation is salt fluoridation, which has been found to be effective against dental caries in programs conducted in Switzerland and Hungary. Currently, fluoridated salt is sold in eight countries. Studies conducted on fluoridated milk in Scotland, Hungary, and Bulgaria have shown it to be effective against dental caries, and a number of fluoridated milk programs are currently at the planning stage. The feasibility of using fluoridated sugar in communities where alternative preventive strategies are not feasible is currently being investigated.

O'Mullane (1995): Can prevention eliminate caries? *Advances in Dental Research* 96-100

Abstract

There are four main factors involved in the carious process: at-risk tooth structure, plaque flora, fermentable carbohydrates, and time. Based on our knowledge of the carious process, four main preventive strategies have been developed over the years, namely, fluorides, fissure sealing, dietary choice, and plaque control. Fluorides are having a

major impact on smooth-surface caries; hence, strategies combining fluorides and fissure sealing are very effective. However, use of fissure sealing is still problematic. Changing dietary practices with a view to reducing dental caries seems to be having little impact on a global scale. Plaque control, as practiced routinely by the majority of people, is not sufficient to result in caries reductions. Deprivation and poverty are strongly associated with high caries levels. Although the preventive strategies currently available are likely to result in lower caries levels for many, for logistical reasons and because of factors associated with deprivation and poverty, caries is likely to remain a major public health problem in most communities for the foreseeable future.

O'Mullane and McCarthy (1981): Dental health status and dental knowledge, attitudes and behaviour in Irish adults. *Journal of the Irish Dental Association* 27 54-60

Abstract

In an interview survey of a representative sample of the adult population in Ireland (16 years or older) it was found that 26 per cent were edentulous. Edentulousness was positively related with age and was lowest in males, urban dwellers, social classes A, B and C1 and in those receiving care under the Social Welfare Dental Benefit Scheme. In dentate persons 8 per cent had experienced toothache in the 4 weeks prior to being interviewed and 8 per cent had one or more loose teeth at the time of the interview. 43 per cent had visited a dentist in the previous 12 months and 89 per cent claimed to brush their teeth at least once a day. "Trouble with teeth" was the most frequent reason given for attending a dentist. Extraction of teeth was the treatment most frequently carried out at the last visit.

O'Mullane, Clarkson Holland O'Hickey and Whelton (1988): Effectiveness of water fluoridation in the prevention of dental caries in Irish children. *Community Dental Health* 5 331-344

Abstract

Between 1964 and 1972 most of the larger public piped water supplies in the Republic of Ireland were fluoridated. In 1986, the population of the Republic of Ireland was 3.5 million of which 65 per cent resided in communities served with fluoridated water supplies. Representative samples of children aged 5, 8, 12 and 15 years resident in fluoridated and non-fluoridated communities were examined for caries in 1984. The results show that the prevalence of dental caries was significantly lower in lifetime residents of fluoridated communities. Comparison of the 1984 data with similar data collected between 1961 and 1963 shows that there has been a major decline in the level of dental caries in Irish children, the decline being greatest amongst younger children and residents of fluoridated communities.

O'Mullane and Whelton (1992): Oral health of Irish adults 1989-1990. Stationery Office, Dublin

Abstract

Until this study was undertaken, there were no national clinical data available on the oral health status of Irish adults. A comprehensive survey was required to assess not only the average number of teeth present amongst Irish adults, but also the condition of those teeth and the gums which supported them. In this study the teeth were examined for signs of

decay and any fillings present were recorded. Accidental damage to the front teeth was also noted as was the need for any orthodontic treatment (braces) in the youngest age group. The health of the gums was measured and any exposed root surfaces examined. The need for dentures or the wearing of dentures was recorded. Other oral conditions such as clicking of the jaw, tooth wear, and any lesions of the oral soft tissues, were also noted.

There is a growing evidence to show that sociological factors can have an important bearing on oral health. Thus, adults participating in this study were questioned on their oral health knowledge, attitudes and practices relating to oral health as well as their perception of the availability, accessibility, and acceptability of oral health services.

Data for a total of 1,927 adults are included in this study. Results indicate that persons on lower incomes in Ireland, especially women, had poorer oral health when compared with those on higher incomes. For example, in those aged 55-64 years the mean number of natural teeth present was 6.5 amongst those in possession of a medical card compared with 10.9 amongst non medical card holders. Medical card holders also had lower levels of gum health, visited a dentist less frequently, were less aware of the need for dental care and had more untreated decay than those without medical cards.

Whilst the level of tooth loss has declined amongst Irish adults since 1979, females continue to lose more of their natural teeth at a younger age. For example in 1989/1990, 30 per cent of males aged 55-64 years were edentulous (lost all their natural teeth) compared with 50 per cent of females of the same age. The percentage of subjects who were edentulous was considerably higher amongst medical card holders than for other subjects: in the 45-54 year age group 23 per cent of male medical card holders were edentulous compared with 10 per cent of males not possessing a medical card.

Approximately one fifth of Irish males, and one tenth of Irish females, aged 16 to 34, have had one or more of their front teeth traumatised.

Subjects who had resided in fluoridated communities had lower levels of decay in both the crowns and roots of their teeth. For example, in the 45-54 age group the average number of decayed and filled root surfaces of subjects in the full fluoride group was 0.3 as compared with 1.4 in the non-fluoride group. In the same age group the mean number of natural teeth present was 16.4 in the full fluoride group compared with 10.7 in the non-fluoride group.

O'Mullane, Whelton and Galvin (1993): Health Services and women's oral health.  
Journal of Dental Education 57 749-52

#### Abstract

Apart from tooth loss and edentulism, data on the relative levels of oral health of men and women are scarce. Evidence from Europe and to a lesser extent from the U.S. shows that women have fewer natural teeth present than men and have higher levels of edentulism. In Europe there is some evidence that socially deprived rural women have the highest levels of edentulism. Due to the lack of adequate detail in published reports of studies, it

is difficult to relate the oral health of women with the availability, acceptability, and accessibility of dental services. Women tend to attend for dental care more regularly than men though there is some evidence that women are more fearful of dental treatment and also perceive cost as a barrier to dental care. Data from the Republic of Ireland suggest that women working in the home have higher levels of tooth loss and edentulism than those working outside the home. There is a need for consensus on methods of reporting oral health data in major descriptive studies. Further research is required to investigate why women tend to lose their natural teeth at an earlier age than men.

O'Mullane and Whelton (1994): Caries prevalence in the Republic of Ireland. *International Dental Journal* 44 387-391

Abstract

The implementation of the Health (Fluoridation of Water Supplies) Act 1960 was preceded by a survey of child dental health in the Republic of Ireland. A follow up national survey in 1982 showed that caries had declined in both fluoridated and non-fluoridated communities, although more so in the former. An adult dental health survey reported in 1992 showed that tooth loss had declined in the period 1979 to 1989.

O'Mullane, Whelton, Costelloe, Clarke and McDermott (1996): Water fluoridation in Ireland. *Community Dental Health* 13 supp2 38-41

Abstract

The basis for the constitutional challenge to the Health (Fluoridation of Water Supplies) Act 1960 in the Republic of Ireland and the judgements of the High Court and Supreme Court are described. Pre-fluoridation baseline surveys and various surveys conducted over the last 30 years in the Republic of Ireland show, that amongst fluoridated communities, children experience lower levels of dental caries and adults retain more of their natural teeth when compared with residents of non-fluoridated communities.

O'Mullane, Whelton, Costelloe, Clarke, McDermott and McLoughlin (1996): The results of water fluoridation on Ireland. *Journal of Public Health Dentistry* 56 SI 259-263

Abstract

The visit of Dr. Trendley Dean to Dublin in the mid-1950s helped accelerate the decision to introduce water fluoridation as a public health measure in the prevention of caries in the Republic of Ireland. A challenge to the constitutional validity of the Health (Fluoridation of Water Supplies) Act 1960 failed and in 1964 the water supplies of Dublin city were fluoridated. Over the next seven to eight years all the major urban communities in the Republic of Ireland were fluoridated. Currently, 67 percent of the 3.5 million people in the country reside in fluoridated communities. Studies conducted over the last 20 years show that residents of fluoridated communities have better dental health than those in non-fluoridated communities, the mean dmft is lower in children and the number of natural teeth present in adults is higher.

O'Reilly and Gavin (1992): Planning primary care dental services for school children. *Journal of Dental Research* 71 1025

Abstract

The purpose of this study was to evaluate the performance of a dental care delivery system for schoolchildren with specific reference to manpower requirements. All children in second class n=1241 and sixth class n=1030 were offered an examination and treatment in 21 schools. In this study the treatment records of all children n=1183 were examined in schools where the treatment programme excluding orthodontics was completed. The number of treatment visits required was recorded. The work rate was 6.64 patients per session and was calculated from the treatment statistics of three dental surgeries. 599 second and 584 sixth class children were included in the study. 541 (90%) and 513 (88%) were examined, 279 (47%) and 192 (33%) did not require any treatment, 230 (43%) and 268 (46%) attended for treatment. 429 and 539 treatment visits were required for the two groups or 0.7 and 0.92 visits for each of the 599 and 584 second class and sixth class children. A total number of 1817 treatment visits or 224 treatment sessions were estimated to be required to deliver routine care excluding orthodontics to all children in second and sixth class in 1990. A further 30 sessions were required for school examinations. Based on these calculations an additional class was included in the dental care delivery programme for 1991. A structure and systematic delivery of dental care to school children facilitates accurate manpower planning at a local level and also enables expansion of services in a planned manner.

O'Reilly and Barry (1995 ): Patterns of referral to an oral surgery department. *Journal of Dental Research* 74 951

Abstract

Clinical audit has become of considerable importance in the management of surgical practice in recent years. While most studies have concentrated on the effective delivery of service to the consumer, this study has attempted to examine the pattern of referral within the health care delivery service.

One thousand consecutive referrals to the Oral Surgery Department, Dublin Dental Hospital, were analysed using EPIS. The variables which were included are shown, table 1. The largest single referral source was general dental practitioners (354, 35.4%), which was closely followed by internal referrals from within the DDH (324, 32.4%). The smallest single source was orthodontists in private practice (4, 0.4%). The patient's age or date of birth was omitted in 412 (41.2%) referrals. The majority of referrals were for secondary care, only 168 (16.8%) being for primary care, of whom 29 (17.3%) were because of some medical problem. The most common reason for referral was for the removal of third molars (550, 55.0% of all referrals). One letter failed to state the reason for referral. While 413 (41.3%) referrals were addressed to a specified individual, 587 (58.7%) were not.

Ormsby (1993): Oral cancer in Northwest Ireland; A 16-year retrospective study. *Journal of the Irish Dental Association* 39 118-120

Abstract

**Objective:** To provide baseline data on oral cancer epidemiology in North Western Ireland. **Background:** Information on oral cancer in the Republic of Ireland is limited. Few studies have been conducted and, frequently, studies from other countries have been used to estimate the extent of the problem. **Study Design:** A retrospective study of records identified oral cancer patients who presented between 1973 and 1988. Only squamous cells carcinomas of covering epithelium were included (ICD-9, 140-146 and 149). **Results:** The commonest site was the lip (81%). Lip lesions tended to be smaller than intraoral lesions and less likely to show lymph node involvement. Among lip cancer patients, there was a marked predominance of men and of outdoor workers. **Conclusions:** Intraoral cancer incidences in North Western Ireland approximate those in other parts of Ireland and many other Western countries. Lip cancer incidences are higher than those in other parts of Ireland and many Western countries. Survival rates are similar to those found in other studies.

Pai, Whelton and O'Mullane (1996): Diffuse enamel opacities in Ireland and the United Kingdom. *Journal of Dental Research* 75 1241

Abstract

Following the Health (Fluoridation of Water Supplies) Act 1960, water fluoridation was introduced in Ireland. Currently 70% of the population receive fluoridated water in their homes. Fluoride toothpaste was launched in Ireland in the early 70s and today 90% of the toothpaste sold in this country contains fluoride. Availability of fluoride is much more wide spread than 30 years ago. As a result, the level of dental caries has declined dramatically. However, the potential for dental fluorosis has increased. The aim of this study was to examine the current level of diffuse opacities (the type associated with dental fluorosis) in Irish children and to compare it with the level in the largely non-fluoridated UK. Three large studies of children's dental health had been undertaken in Ireland in recent years, in County Clare (1991), the Western Health Board (1992) and the Eastern Health Board (1993). Enamel opacities were recorded in children using the Modified DDE index (FDI 1992), by a team of trained and calibrated examiners. The results of these studies show a lower prevalence of diffuse enamel opacities in non-fluoridated areas as compared with fluoridated areas. For example in 12-year-old Co. Clare children the prevalence of diffuse opacities was 17% in fluoridated areas and 13% in non-fluoridated areas. In the Western Health Board, the figures were 28% and 24% respectively and in the Eastern Health Board, (fluoridated) 28.5% of 12-year-old children had diffuse opacities. By comparison, in the UK in 1993, 28% percent of the 12-year-old children were found to have diffuse opacities. In conclusion, the prevalence of diffuse enamel opacities in Irish 12-year-olds is similar to that of the 12-year-olds in the UK. Also, the prevalence of diffuse opacities in Ireland tends to be higher in fluoridated than in non-fluoridated areas.

Roe (2000): A study of the profile, referral and treatment patterns of patients attending for dental general anaesthesia to Eastern Health Board services at St. James', Dublin.  
MSc Thesis, University College Cork

Abstract

There is a tradition in Ireland and the UK for the provision of dental treatment, particularly extractions in children, under general anaesthesia. There are no recent studies on the provision of dental general anaesthesia in Ireland. Currently, the Eastern Health Board offers a full-time dental general anaesthetic service at St. James' Hospital, Dublin. This study selected a sample of 300 child patients who attended this service during November 1998. Age distribution, gender and addresses were used to obtain a profile of patients attending the service. Socio-economic status was assessed by the use of a deprivation index and medical card dependency. Reasons for referral and clinical information provided were analysed. In many cases, patients were referred without a reason for referral noted on the referral form. Trends in numbers attending the service were examined for the years 1992-1999. Patterns of treatment were analysed by investigating numbers of primary and permanent teeth extracted in a range of ages. Results showed that there is little evidence of a trend towards fewer patients being referred for dental general anaesthesia at this centre. Mean numbers of extractions of primary teeth have remained relatively static over the last eight years. There is evidence of a trend of fewer permanent teeth being extracted. There is wide variation in the rates of referral by individual dentists, suggesting that objective criteria for referral are not in use. It is concluded that the Eastern Health Board should formulate objective criteria for referral to this service and should consider introducing a pre-anaesthetic assessment to which patients could be routed prior to receiving general anaesthesia. Consideration should also be given to introducing alternatives to general anaesthesia, and to the monitoring and future evaluation of this service.

Shalloe, O'Mullane and Whelton (1994): Loss of periodontal attachment in Irish adults.  
*Journal of Dental Research* 73 877

Abstract

A survey of the Oral Health of Irish Adults (O'Mullane, D. and Whelton, H, Stationary Office, Dublin, 1992) included an assessment of loss of attachment. In this paper the relationship between loss of attachment scores, recorded using a CPITN probe, and dental attitudes and behaviour, assessed by means of a questionnaire, is explored. Subjects in the 45-54 age group who claimed to brush their teeth twice a day or more had a mean loss of attachment of 2.7mm, compared to 2.8mm for those who claimed to brush their teeth once a day, and 3.3mm for those who claimed to brush their teeth less than once a day. Similar trends were observed in the other target groups, except in the 16-34 age group in which loss of attachment was low. Subjects in the 55-64 age group who attended a dentist every 6 months had a mean loss of attachment of 2.7mm, compared to 3.2mm for those who attended every 12-24 months, 3.3mm for those who claimed to attend every 2 years or less frequently. In the 45-54 age group, the mean loss of attachment was 2.4mm for those whose usual reason for attending the dentist was a routine checkup. This increased to 2.8mm for those who only attended when treatment was needed, and further increased to 3.2 for those who only attended when in pain, or never attended the dentist. A significant trend was observed in the other age groups, excluding the 16-34 year olds.

Subjects in the 55-64 and 65+ age groups who were medical card holders had a mean loss of attachment of 3.4mm compared to 3.0mm for non-medical card holders. In the younger age groups, there was little difference in loss of attachment scores between those who held medical cards and those who did not. Subjects who brushed their teeth frequently and attended a dentist regularly and routinely had a lower mean loss of attachment score than those who brushed infrequently and who did not attend a dentist regularly. This was particularly noticeable in the older age groups.

Sleeman, Barry, Ryan and Allen (1995): Day case oral surgery: a review of 25 years experience at the Dublin Dental Hospital. *British Dental Journal* 179 221-224

#### Abstract

A retrospective analysis of the changing work-load at the Dublin Dental Hospital oral surgery day case unit was undertaken. This involved 26,697 operations performed during the 25-year period 1968-1992. The results show how the practice of oral surgery has changed over this time. Annual totals ranged from 766 to 1549 operations. While most categories of operations remained largely unchanged, the removal of impacted third molars increased from 10.5% of the annual total to 57.0%. Routine extractions of permanent teeth decreased from 53.9% of the annual total to 18.0%.

Western Health Board (1994): Children's dental health in the Western Health Board region, 1991-1992. Western Health Board, University College Cork

#### Abstract

This survey of the oral health status of children and adolescents in the Southern Health Board is a response to one of the goals for oral health services contained in the health strategy document "Shaping a Healthier Future" namely the setting up of a standardised database on oral health status. The results of this survey are also a measurement of the oral health gain achieved over the last 33 years. In other words, this survey is a scientific measurement of the effect of the various activities that comprise the oral health services. This measurement of oral health gain is essential for the proper management of the oral health services in the region as it makes it possible to devise specific strategies to address real oral health needs. This survey also measured the knowledge, attitudes and behaviour of some of the participants about factors that effect oral health and the uptake of the existing oral health services.

#### Findings

- Since 1961 (in Cork) and 1963 (in Kerry), there has been a considerable drop in tooth decay levels amongst 5, 8, 12 and 15-year-olds in the Southern Health Board.
- Children who live in areas with water fluoridation have less decay than those in non-fluoridated areas.
- More than half of all 12 and 15-year-olds need instruction in toothbrushing. This can be carried out by dental hygienists.
- One in seven boys had damaged their front teeth due to trauma compared with one in twenty girls of the same age.
- Most 8 and 15-year-olds brush their teeth twice a day.
- Frequent consumption of sweet snacks between meals is common, particularly in 15-year-olds.

Whelan, O'Donoghue, O'Reilly, Omar, Rowan et al (1998): A study of denture wearing in a selected elderly institutionalised population. *Journal of Dental Research* 77 1289

Abstract

In this study, a survey of the denture status of elderly residents (65+ years) in a long-term institution was undertaken. The aim of the study was to assess the levels of edentulousness, along with the condition and perceived need and patient satisfaction with their dentures. A convenient sample of 88 residents aged 65 years and over was selected; 51 females and 37 males. Fifty-three percent of the population was found to be edentulous, 56% (30) of the females and 50% (18) of the males. Thirty-two percent (15) of these residents wore no dentures. Poor denture hygiene was the commonest finding with 96% of dentures having either hard or soft debris. No dentures were marked with any form of identification. 18% (11) of the participants claimed to have difficulty chewing with their dentures. 20% (12) were dissatisfied with appearance of their dentures. 31% (19) of the residents felt they needed new dentures. The recommendations of the study were to review the existing delivery of a dental service in relation to the provision of dentures within the institution in question. It would be initially necessary to take into account the patient's perceived need and satisfaction with their dentures. In addition, it was considered advisable to improve denture hygiene by educating both the residents and nursing staff in denture care and to encourage marking of all dentures within the institution.

Whelton and O'Mullane (1991): Periodontal disease among Irish adults. *Journal of Dental Research* 70 777

Abstract

A national survey of adults dental health was conducted in Ireland in 1989/90. The primary aim of the study was to measure oral health of Irish adults. This paper presents the results for periodontal disease. A random sample of 1,927 adults over the age of 16 years was examined by 12 teams of dentists and recorders. The teams were trained and calibrated in standardised examination criteria. The community periodontal index of treatment need (CPITN) was used to measure levels of periodontal disease and the need for treatment. A measurement of loss of attachment of the periodontal ligament was used in conjunction with the CPITN to provide a more complete picture of the accumulated effect of periodontal disease. In the case of 35-44 year old dentate subjects (n=402), 6% had a highest CPITN score of H (healthy). The percentages with maximum scores of bleeding (B), Calculus (C), shallow pocketing (P1) and deep pocketing (P2) were 8%, 70%, 13% and 2% respectively. For this age group 30% had loss of attachment of 4.5 mm or greater in one or more teeth. The results for this and other age groups studied suggest that a high proportion of the periodontal treatment requirement of Irish Adults comprises scaling and polishing of the teeth.

Whelton and O'Mullane (1992): Caries experience according to fluoridation status in Irish adults. *Journal of Dental Research* 71 612

Abstract

A national survey of adults dental health was conducted in Ireland in 1989-1990. A total of 1,927 subjects were examined. Data were also collected on fluoridation status. This

paper presents the results for caries according to fluoridation status in the 16-24 and 25-34 year old group.

Four hundred subjects age 16-24 and 350 subjects aged 25-34 were examined. In the younger group 101 had never received fluoride in their domestic water supply since birth ('none'), 227 had received a fluoridated domestic water supply since birth ('full') and 72 had received a fluoridated water supply but not since birth ('some'). The corresponding number in the 25-34 year old group were 90, 19 and 241 respectively. The mean DMFT for 16-24 year olds in the 'none' fluoride category was 7.6 compared to 7.2 in the 'full' group and 7.8 in the 'some' group. In the 25-34 year old group the caries experience was considerably higher than the mean DMFT in the 'none', 'full' and 'some' groups being 16.9, 13.3 and 14.4 respectively.

The difference in DMFT between the 'full' and 'none' fluoride groups is lower than expected. However, it is postulated that as 65% of the population of Ireland reside in communities served with fluoridated water, the subjects in the 'none' fluoride group benefit from the 'halo' effect and do not represent a true non-fluoride group. Further work is planned to investigate this.

Whelton and O'Mullane (1992): Dental caries in Irish adults in 1989. *Journal of Dental Research* 71 1023

Abstract

A National Survey of Adult Dental Health was conducted in the Republic of Ireland in 1989. A representative sample of adults (N=1927) was clinically examined by 12 trained and calibrated dentists. In general, the indices and the examination criteria used were those recommended by the World Health Organisation (WHO Basic Methods, 1987). The sample was structured to yield a random sample of households. A total of 60 electoral areas throughout the country were chosen and approximately 50 households were contacted in each area. Adults in the chosen households were asked to consent to participate in the survey. This paper reports on the levels of dental caries in Irish adults. In subjects aged 16-24 the mean number of teeth present was 27.2 of which a mean of 4.9 were decayed or filled (DFT). In 25-34 year olds the corresponding figures were 25.1 and 8.7 and in those aged 65 years and older the figures were 7.2 and 2.8. The percentage of the mean DFT attributable to the decayed (D) component ranged from 13 per cent in 25-34 year olds to 36 per cent in those aged 65 years and older. It is concluded that levels of caries amongst Irish adults are high and that there is a substantial increase in caries levels between ages 16-25 and 25-34 years.

Whelton, O'Mullane and Holland (1993): The prevalence of root surface caries amongst Irish adults. *Gerodontology* 10 72-75

Abstract

In a national survey of adult dental health conducted in the Republic of Ireland in 1989/90 a total of 1,527 subjects aged 25 and older were examined for root surface caries. It was found that the prevalence of root surface caries was highest in older age groups and also amongst males, residents of non-fluoridated communities and those earning low incomes. Tooth loss masked the potential prevalence of root surface caries.

With more persons retaining their natural teeth into middle and old age the prevalence of root surface caries is likely to increase in the future.

Whelton, O'Mullane, Clarke and McDermott (1995): Caries in children in the East of Ireland in 1993. *Journal of Dental Research* 74 410

Abstract

The population of the Eastern Health Board in Ireland is 1.25 million. All children up to age 16 years are eligible for state funded dental care through the salaried public dental service and over 90% have been lifetime residents of fluoridated communities since birth. Surveys of children's oral health in the region were conducted in 1952, 1963, 1979 and 1984. The aims of the present study were to measure changes in caries levels which have occurred since 1984 and to provide detailed information on the variation in oral health amongst the 10 administrative areas in the region. A representative sample of 8,663 subjects aged 5, 8, 12 and 15 years were examined by a team of ten examiners who were trained and calibrated in the WHO examination criteria (WHO Basic Methods 3rd Edition, 1987). Caries was recorded at cavitation level, a right angle probe was used only to confirm a diagnosis and no radiographs were taken.

Caries levels recorded in 1993 were more than 30 per cent lower than those recorded in 1984 in all groups. For example, the dmft scores recorded in 5-year-olds was 1.3 in 1994 and 0.9 in 1993. For 12-year-olds the mean DMFT scores were 0.5 and 0.3 respectively. In the case of 12-year-olds, the DMFT scores were 2.2 in 1984 and 1.4 in 1993. For 15-year-olds they were 3.7 and 2.5 respectively. Wide variations in caries levels was found amongst the administrative regions. Among the eight fluoridated administrative regions in Dublin the range of mean dmft scores for 5-year-old children was 0.3 to 1.91.

These data show marked reductions in dental caries in the Eastern Health Board Region since 1984. There is also evidence of wide local variation amongst the areas studied.

### APPENDIX III

#### Publications by Staff and Students of the Dublin Dental Hospital and School of Dental Science, T.C.D (January 1995-March 2000)

*[These have not all been analysed yet for the OHSR content]*

#### 1995

Beirne, C., Brady, F., Ryan, C., Bhatia, S. & Dhaif, G. (1995). Changing trends in mandibular fractures treated at national maxillofacial unit, Dublin. *Journal of the Irish Colleges of Physicians and Surgeons* 24:177-178.

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