

## Dental psychiatry

### False teeth and Alzheimer's disease

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Alzheimer's disease (AD) is the commonest form of dementia and affects about 6% of people over the age of 65. The aetiology is unknown and putative causes range from environmental toxins (Martyn *et al*, 1989) to chromosome abnormalities (St George Hyslop *et al*, 1987). Despite the extensive resources being channelled into AD research, it is surprising that no study has yet discussed the role of false teeth.

#### Subjects and methods

As part of a serious study on the natural history of AD, it was noted during physical examination whether the patient had false teeth or not. The oral cavity was visually examined by asking the patient to open the mouth and the examiner peered in. The presence of false teeth was operationally defined as "the absence of natural teeth and their replacement, however episodic, with false ones". This overcame

the problem of patients who kept their false teeth in a pocket or handbag. At least 50% of the teeth needed to be false to fulfil the definition. If the patient was uncooperative, information was sought from relatives and care staff. Inter-rater reliability as to presence or absence of false teeth was excellent (100%), i.e. no raters disagreed as to presence or absence of false teeth. The diagnosis of AD was made on clinical grounds using strict standardised criteria (McKhann *et al*, 1984), each patient undergoing a physical and mental state examination (Folstein *et al*, 1975) and computed tomography (CT) scan. As per the authors' usual practice, expert statistical advice was sought and then completely ignored. A 'statistical screen' (or 'data trawl') was performed using every available statistical procedure known and only the significant results were recorded. In the spirit of Smeeton (1991) and in an attempt to impress referees, confidence intervals for differences between groups were also calculated. (see Table).

TABLE  
False teeth in Alzheimer's disease

|   | False teeth present   | False teeth absent    | Significance    |
|---|-----------------------|-----------------------|-----------------|
| Number  | 98                    | 61                    |                 |
| Age (years, SD, 95% C.I.)                                     | 81.6, 6.2, 80.4–82.8  | 77.2, 6.3, 75.6–78.8  | $P < 0.001^a$   |
| Age of onset (years, SD, 95% C.I.)                            | 76.9, 6.8, 75.5–78.3  | 71.4, 7.1, 69.6–73.2  | $P < 0.001^a$   |
| Duration of illness (months, SD, 95% C.I.)                    | 60.3, 43.3, 51.7–68.9 | 70.0, 41.3, 59.6–80.4 | NS <sup>a</sup> |
| Mini-Mental State Examination (Mean, SD, 95% C.I.) (Max = 30) | 9.5, 6.6, 6.6–12.4    | 6.9, 6.3, 5.3–8.5     | $P < 0.02^a$    |
| Family history of dementia                                    |                       |                       |                 |
| PRESENT   | 35                    | 13                    |                 |
| ABSENT  | 63                    | 48                    | $P = 0.054^b$   |
| Temporal lobe atrophy on CT*                                  |                       |                       |                 |
| PRESENT   | 51                    | 45                    | $P < 0.02^b$    |
| ABSENT  | 10                    | 0                     |                 |

Key C.I. Confidence intervals

SD standard deviation

a-students' 't' test

b- $\chi^2$

\*CT scans could not be performed on every subject

## Findings

The presence or absence of false teeth was assessed in 159 patients. Over half of the patients had false teeth and their presence was associated with an increased age and later age of onset of the dementia. Patients with false teeth were less cognitively impaired, had more temporal lobe atrophy on CT scan and there was a trend for them to more often have a family history of dementia. The examination for false teeth was found acceptable to patients and no ethical problems were encountered. Several patients had two sets of false teeth, but these were only counted once.

## Discussion

To our knowledge, this is the first study to investigate the presence or absence of false teeth in a neuro-psychiatric disorder. The older age of the patients with dentures and their lesser degree of cognitive impairment may suggest a subtype of AD based on the presence or absence of false teeth. The trend towards an increased family history of dementia in patients with false teeth suggests a genetic predisposition to both, although this finding did not quite reach statistical significance despite great

efforts by the authors. The association between the presence of false teeth and temporal lobe atrophy on CT scan may be as a result of reduced mastication leading to disuse atrophy of the limbic system.

Further studies (including case control studies) are essential, particularly on the effects of fluoridation of the local water supply and whether the acquisition of false teeth is before or after the onset of dementia. It may be that future research into AD should be directed more towards the mouth than the brain.

## References

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## Conference briefings

### Mental health and deafness\*

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The multidisciplinary conference took as its theme the potential for a British society for mental health and deafness which would be aligned with the European Society for Mental Health and Deafness (ESMHD). The ESMHD itself has encouraged new developments in Germany and Holland, providing information and support as well as the opportunity to learn from the mistakes and successes of established services in other countries. A major task is to promote the involvement and training of deaf people themselves, because, for profound, prelingual deafness, this population has all the hallmarks of a cultural and linguistic minority.

\*Conference held on 15 November 1991 at St George's Hospital Medical School, London.

The social model of health has particular relevance given that deaf people are often frustrated in their dealings with the hearing world. Specialist social workers with deaf people, with knowledge, awareness and communication skills are thin on the ground; trained, deaf social workers rarer still. They end up giving psychiatric opinions to generic health workers, because, for example, general practitioners have few of the appropriate skills and knowledge to make a proper assessment: the deaf person is often marginalised by this process.

The question 'Communication: disorder, deprivation or discrimination' was raised by Ms Alice Thacker, a Mental Health Foundation research fellow. Many deaf people with mental health