RESEARCH SUMMARY

BMI and oral health in the elderly

The relationship between oral health status and Body Mass Index among older people: a national survey of older people in Great Britain.

A. Sheiham, J.G. Steele, W. Marcenes, S. Finch and A.W.G. Walls *Br Dent J* 2002; 192: 703–706

Aims

To assess the relationship between oral health status and Body Mass Index.

Material and methods

This paper relates to the free-living sample (participants who lived in their own home, rather than an institution) of the National Diet and Nutrition Survey: people aged 65 years and older. Subjects: 629 adults.

Data collection

A probability random national sample of adults who had a dental examination, an interview and an anthropometric examination.

Data analysis

Fisher's exact test and multivariate logistic modelling.

Findings

Being underweight was relatively uncommon in this population. People without teeth were significantly ($P=0.05$) more likely to be underweight than those with 11 or more teeth; 12.3% and 2.9%. A highly statistically significant ($P=0.001$) difference was observed in BMI between dentate people with 1–10 teeth and with more than 10 teeth; 24% and 2.9% were underweight. Dentate people with less than 21 natural teeth were on average more than 3 times more likely to be obese than those with 21–32 teeth ($P=0.036$). There was no significant difference in both the proportion of overweight and obese adults between those who were edentulous and dentate with 21 or more teeth. A similar pattern was observed when the number of posterior occluding pairs was compared with BMI categories. Results of multiple logistic regression were adjusted for the confounding effects of age, social class, region of origin and partial denture wearing.

Conclusions

Older people in Britain with more than 20 teeth are more likely to have a normal Body Mass Index.

COMMENT

This paper presents further important data from the National Diet and Nutrition Survey, a large survey with carefully drawn samples. It confirms that dental state explains a small but significant part of the variability of body weight.

Obesity is often bad health news for older people; increasingly so with increasing age and dependence. Even though this is most important for the very old and dependant, it is valuable that data from the free living sample are presented. People in institutions are commonly given a diet prepared for those with the poorest chewing ability.

BMI is a simple and therefore useful measure of body fatness. The most striking aspect of these data is that 19% of these people were obese and a further 47% were overweight. Within this general picture some statistically significant interesting differences are seen. More of the group with > 20 teeth have 'normal' BMI than other dentate groups which is consistent with trends for some aspects of diet and nutrition and for ease of chewing which have already been reported from this study.

It is also striking how few people in any group were below normal BMI, 8% of those with <11 teeth and only 1% of those with 11+ teeth. However, the importance of low body weight in old age justifies future attention to any factors contributing to low BMI including dental state. 'Broken occlusions' are common, only 27% of this sample of dentate people had >20 teeth and in practice, it is sadly true that without positive influence, progressive tooth loss is likely for these cohorts.

Interestingly, the edentate group were intermediate on the prevalence of underweight (5%) but on the prevalence of overweight and obesity (63%) they were no worse than the best dentate group with >20 teeth (62%). Thus although the data do indicate that for normal weight, more than 20 teeth is better than fewer, the data raise a question on the statement that 20+ teeth provides a satisfactory functional dentition.

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IN BRIEF

- Having a functioning natural dentition of more than 20 teeth is a reasonable threshold for acceptable oral health and a functional dentition into old age.
- Maintaining a healthy and functional dentition into old age may have an important additional role to play in maintaining a healthy Body Mass Index.
- The association of poor oral health with obesity is likely to be associated with the quality of the diet.
- Amongst adults over 65 years, having few or no natural teeth was associated with a greater risk both of being underweight and with a greater risk of being obese.
- There was no difference in BMI between edentulous people and dentate adults having a functioning dentition of more than 20 teeth.