A study of oral health prevention behaviours for patients with early stage dementia

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In brief

Reminds dentists from all professional groups of the importance of prevention and use of the Delivering Better Oral Health Toolkit.

Informs dentists of the importance of checking their patients' medical history for reports of early dementia and restructuring the preventive care offered to reflect this increase in dental disease risk.

The role of Memory Assessment Service nurse in care of patients with dementia and the importance of a multidisciplinary approach to promoting good health.

Background Thorough dental prevention provided at the diagnosis of early stage dementia may be able to reduce the risk of dental disease before the associated cognitive decline takes hold. **Method** A questionnaire was used to see how many patients with a recent diagnosis of dementia were registered with a dentist and if they were accessing preventative dental care. The questionnaire was administered to patients attending Memory Assessment Services (MAS), approximately ten weeks after initial diagnosis. A similar questionnaire was conducted among MAS staff providing insight into their own personal dental care knowledge and behaviours. **Results** The total number of participants in the study was 51. Eighty percent were currently registered or seen regularly by a dentist. About half of all patients attended for regular hygienist sessions. Most patients did not receive dietary advice or oral hygiene instruction, nor were offered additional fluoride supplementation. **Conclusion** There was clearly scope for improving oral health education and prevention for dementia patients. MAS nurses were aware of the need for good oral health for themselves and for their patients, however, weren't aware of the current best evidence for prevention as prescribed by the Delivering Better Oral Health toolkit.

Listen to the author talk about the key findings in this paper in the associated video abstract. Available in the supplementary information online and on the BDJ Youtube channel via http://go.nature.com/bdjyoutube

Introduction

Dementia can have a devastating effect on oral health, not only as health behaviour changes can cause an increased incidence of disease, but also as cooperation to receive treatment diminishes too.

Thorough dental prevention provided close to diagnosis of early stage dementia may be able to prevent or at least lessen this deterioration once the cognitive decline associated with dementia takes hold. There are evidence-based programmes for prevention, namely Delivering Better Oral Health[1] which can be used to provide optimum prevention practice, but in most cases, are patients aware of what is available?

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There is evidence that dementia sufferers have more gingival and periodontal difficulties and this correlates with the severity of their dementia.[2] People with dementia and, in particular, Alzheimer's disease are known to suffer more of the following:[2–7]

- Higher levels of inflammation
- Higher gingival disease severity
- Higher levels of gingival bleeding
- Increased calculus/plaque deposits
- Higher numbers of deep periodontal pockets.

Possible reasons, such as reduced salivary flow, together with an inability to perform oral hygiene techniques have been suggested as having an influence on these conditions.[8–10]

Conversely, other papers present evidence which conflicts with the above reports, stating that there appears to be no significant difference when comparing oral health markers of those without dementia to those with dementia.[3]

Drug therapies for dementia can themselves cause co-morbidities such as vomiting, xerostomia, tardive dyskinesia and gingival overgrowth. Xerostomia is likely to lead to a potentially catastrophic increase in dental caries as the teeth lose the protection of readily flowing saliva.

Disease progression in dementia may vary depending on a number of physiological factors, but additionally as cognition is reduced so is the ability to articulate oral health problems; this may cause agitation and aggression in some patients which may lead to reluctance for care-givers to maintain regular dental check-ups. Furthermore, such resistant behaviour may warrant care and treatment performed under general anaesthesia as the patient becomes less able to tolerate routine procedures.[11,12] When an individual has reached this stage of cognitive decline there will be inevitable hindrances, such as the need to assess capacity to consent to treatment and agree best interests for treatment with the patient's appointee or power of attorney rather than directly with them if the patient is deemed to be incapacitated. If the patient

Box 1 Comments from patients interviewed

Positive comments:

'I feel that the care at my current dental practice is adequate'
'Good value for money'
'Friendly, welcoming & private'
'My practice provides good service, the dentist takes time with patients and they recall patients every 6 months'
'Good service'
'Fully satisfied, great service' (2 × similar comments)
'I always receive a reminder for my check-ups' (2 × similar comments)
'Although the practice is busy, they give good care'
'I owe my life to my dentist – she discovered an oral cancer under my tongue'
'Good service and value for money' (3 × similar comments)
'Friendly with children, caring atmosphere, clean facilities'
'Adequate. Quick appointments'
'Great service'
'My dentist takes his time to explain treatments and ensures I'm comfortable, there is also wheelchair access'
'Okay but I would like more time'
'Excellent'
'High quality service'
'I am happy with my current dentist' (3 × similar comments)

Negative comments:

'Too expensive' (2 × similar comments)
'I have had a bad experience with my dentist' (details not given)
'Expensive. I'd be more likely to attend if there was help with costs!'
'Too expensive'
'Prolonged, unnecessary treatment – now I have difficulty eating'
'Bad service'
'Expensive and too quick'
'Not enough time to explain treatment to patients'

has additional co-morbidities such as severe chronic illness, then the risk of fatality when providing a general anaesthetic will be increased, as well as the psychological upset of anaesthetising a scared, vulnerable patient only for them to wake up in an unusual environment with likely post-operative pain from the site of any dental extractions.

The Delivering Better Oral Health[1] toolkit, brings together the best evidence available on all aspects of oral health and gives advice on how best to present the following common oral health problems:

- Principles of oral hygiene including brushing
- Fluoride supplementation
- Healthy eating
- Improving periodontal health
- Smoking and tobacco use
- Alcohol
- Tooth wear.

The greatest strength of the toolkit is that the procedures outlined are simple and not technical to carry out. Switching to a high strength toothpaste; application of fluoride (by dentist, trained dental nurse or hygienist/dental therapist); and reducing the frequency of sugary food and drinks should be simple enough changes to carry out.

If a patient is risk assessed as having a high dental disease risk then most treatment plans should automatically include an element of prevention input. Failure to do this runs the risk of any reparative work provided having a shorter life span, as the disease process will otherwise likely continue. Patients with dementia should be classed as vulnerable to dental disease.

Memory Assessment Services (MAS)

The Department of Health together with Care Services Improvements Partnership produced a service guide named Everybody's Business in 2005.[13] The primary focus was to identify and assess individuals with early symptoms of dementia to enable prompt intervention.

Furthermore, The National Institute for Health and Clinical Excellence produced guidance for the management of dementia in 2006. The key recommendations favour integrated working among agencies and the use of memory assessment services as the first stage in the referral process for assessment and diagnosis of dementia. The initiative also advocated staff training to provide optimal support for patients and carers.[14,15]

Sussex Partnership NHS Foundation Trust and Alzheimer's Society are jointly commissioned to deliver Memory Assessment Services across West Sussex. Patients who present to their GP with early signs of cognition deficit and memory problems are referred for specialist assessment.

The objective of the MAS service is to deliver an opportune, high quality, diagnostic evaluation, necessary cognitive treatments, as well as providing continued information, advice and support via Alzheimer's Society dementia advisers and dementia support workers. The MAS assessment leads to significant development in the rate of detection for cases of dementia.

Aims/objectives

The aim of this service evaluation was to examine and record current access to primary care dental prevention advice and care, for patients with a recent diagnosis of early stage dementia.

The following details about the patient's current access to primary dental care were recorded, including: attendance at the dentist; time since last check up; whether they saw a hygienist; whether they received any fluoride supplementation (varnish or additional strength paste); and whether they had received oral hygiene or dietary advice. They were also asked to share any comments they may have about their dental care in general (Box 1). In addition, there were questions asking patients to rate their own oral health and whether they needed treatment that they may have been postponing for a particular reason, for example, cost, transport issues, or mobility problems.

Objectively, it was hoped that if the current situation was known, then this information could possibly be used in the planning of future healthcare services to meet the needs of this group of patients. Ideally, this would be reflected by improving, if necessary, access to prevention, either by development of specific services within the area to support patients or to provide education to the patients directly, patient support groups, and healthcare professionals including GDPs, outlining the need for

Table 1 Prevention experience of patients with early dementia

	Yes		No	
	Number	Percentage	Number	Percentage
Do you have regular hygienist/prevention sessions?	25	49%	26	51%
Have you recently had any oral hygiene/dietary advice?	10	20%	41	80%
Do you receive additional fluoride supplements?	7	14%	44	86%

good oral health promotion in patients with early stage dementia.

The other objective was to gauge the understanding of dental prevention among the mental health professionals providing care to this group of patients. Once again, support and education could be provided, if necessary, to this group to improve their knowledge of best practice.

Methodology

The team worked closely with the Sussex Partnership NHS Foundation Partnership MAS, to identify suitable patients. Participants for the evaluation were selected from appointment diaries over a period of time from October to December 2016.

A questionnaire was developed to gain insight into different aspect of general and preventive dental healthcare behaviour. As the questioning was carried out anonymously, was voluntary and had no effect on any clinical outcomes, no ethical approval was needed. However, the project was registered with both the NHS Trusts' clinical audit departments (Sussex Community NHS Foundation Trust and Sussex Partnership NHS Foundation Trust).

Data collection took place in Horsham, Crawley and Haywards Heath (West Sussex) at MAS clinics run by the MAS nurses. Patient participation was determined by MAS nurses during consultation; patients who were edentulous, lacked capacity or were disinterested were not included in the study. West Sussex is a relatively affluent part of the country but one where pockets of deprivation exist.

The questionnaire was administered at the same time as the MAS medicine review, approximately ten weeks after initial diagnosis.

An information sheet based on the principles of DBOH was given to the patients to outline the most important points and for them to take home.

A similar questionnaire was conducted among MAS staff providing insight into their own personal dental care experiences.

Results

Data collected from patients

In total 51 patients participated in the study. Of the patients questioned, 80% (41) said they were currently 'registered' or seen regularly by a dentist (Fig. 1). Sixty-eight percent (35) said they had been to the dentist within the last 12 months with a further 16% (8) stating that they had been within the last two years (Fig. 2).

The results in Table 1 show that just under half (25) of the patients questioned have had regular hygienist/prevention sessions. When asked, only 20% (ten) of patients said they had received dietary or oral hygiene instruction. The percentage of patients who had received supplementary fluoride, such as varnish or prescription high strength toothpaste, was 14% (seven).

When asked to provide comment on their current dental care, 55% (28) gave a positive comment, 18% (nine) a negative, with 27% (14) not providing a comment (Fig. 3.)

When asked to self-report their perceived level of oral health, 10% (five) reported it as excellent, 63% (32) reported it as good, 23% (12) reported it as fair with 4% (two) reporting it as poor (Fig. 4). When asked about delaying or putting off treatment, 12% (six) said they were, and 80% (41) said they weren't, with 8% (four) being not sure (Fig. 5).

Data collected from MAS nurses

A separate questionnaire survey was conducted among ten MAS nurses. When questioned on how important they felt oral health was for the dementia patient, 70% (seven) felt it was very important and 30% (three) felt it was important. However, when asked whether they aware of the Delivering Better Oral Health toolkit,[1] 0% reported being aware of its existence.

With regards to their own attendance behaviour, 100% (ten) attended the dentist for check-ups with 40% (4) attending for hygienist and prevention, and 80% (eight) for routine care (fills etc).

When asked about their own experience of preventive care, 70% (seven) said they had been given prevention advice in the last year. One-hundred percent described their current oral health as good or excellent.

Discussion

The results show that oral health is important to patients attending MAS with 80% either registered or regularly attending a dental practice. Recent data[16] show this compares favourably with the 51% comparison for adult patients attending within the last 24 months in England as a whole, although these figures are only for NHS general practice. When questioned about

Fig. 1 Number of patients regularly seen by a dentist

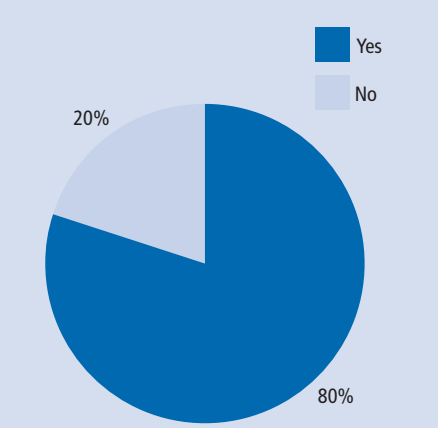

Fig. 2 Time frame of most recent dental check-up

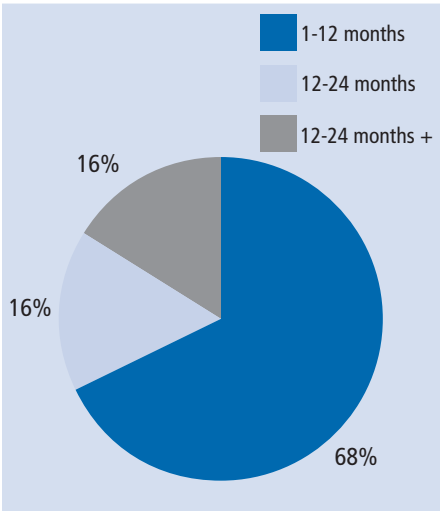

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Fig. 3 Patients' opinions of their current dental service

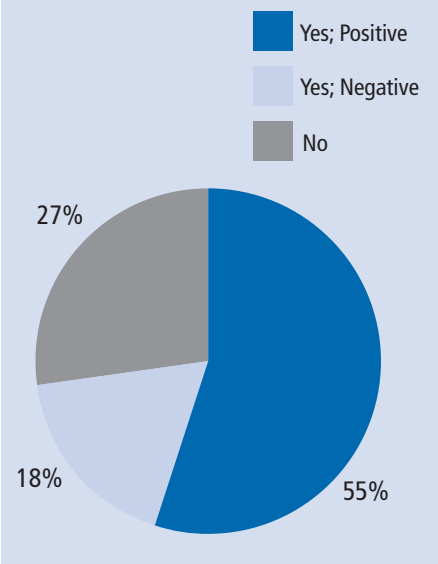


Fig. 4 Patients' opinion on own oral health

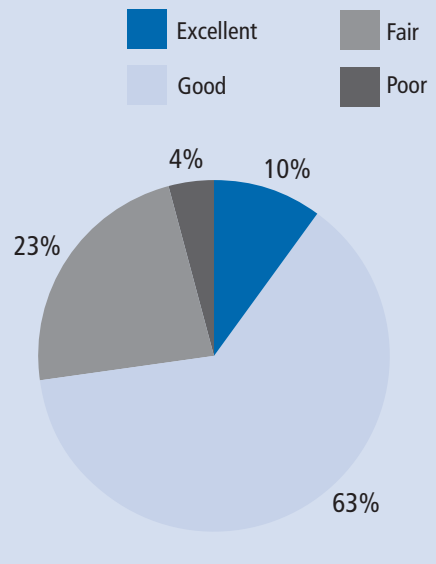
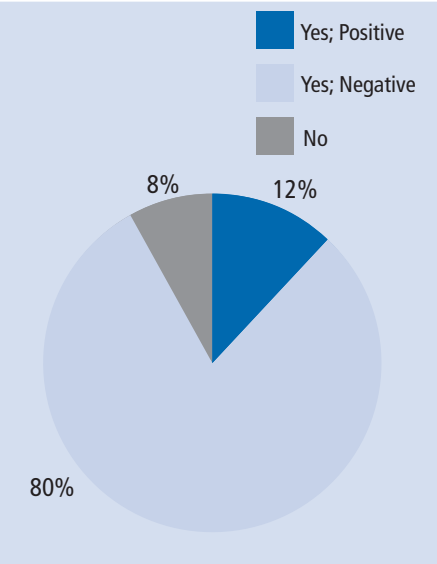


Fig. 5 Number of patients putting off/ delaying dental treatment



check-ups, 85% responded that they had been seen fairly recently (that is, within the past 12–24 months).

Approximately half of the patients interviewed reported attending hygienist prevention sessions so it is rather surprising that most patients did not report receiving dietary advice or oral hygiene instruction as part of their visit. This may suggest underutilisation of the role of the hygienist, where the clinician may be more involved in providing scaling of the teeth, rather than additionally providing extensive oral health advice to improve a patient's ability to care for their own teeth at home. There is also a misconception about tooth brushing among the general population that this alone prevents tooth decay; whereas a good balanced diet and abstinence from sugary drinks is also fundamental to good oral health. This makes enabling patients to achieve good dietary control to prevent dental decay especially important. Additionally, the number of patients receiving fluoride supplements was also low with only seven (14%) of the patients saying that they had been supplied with some form of fluoride supplementation. If awareness was raised about the benefits of this low tech prevention option, then this should lead to an improvement on oral health of this vulnerable population. To address this problem, the dental profession as a whole, needs to be aware of the additional disease risk being faced by this group of vulnerable patients, and spend time focusing on preventive dental care. This advice should be evidence based, and can already be found in Delivering Better Oral Health.[1]

Interestingly, the MAS nurses did report a higher frequency of being offered prevention advice by their dentist or hygienist with 70% reporting having been given advice against the 20% of patients reporting having received advice.

Patients who were asked to rate their own oral health may have provided a very subjective opinion of their 'good' oral health. This can only legitimately be verified by a qualified professional dental examination. Variations within 'good oral health' are open to interpretation with several individuals with obvious missing teeth stating theirs was good based on being able to eat certain foods such as steak or an apple. There were a substantially low number of patients currently putting off treatment by their dentist which highlights awareness of the importance of good dental care among the participants.

Despite the relatively limited cohort size there are clear indications that the contributors value their oral health and wish to access services and education to maintain it.

The patients who took part in the study all had early dementia and mild cognitive impairment. However, occasionally they were reliant on the person also in attendance, often a spouse or adult child, for recall of certain past dental experiences. Additionally, the patients who self-excluded themselves from taking part could be patients with lower levels of dental care experience due to reduced engagement with health services.

Feedback on questionnaires from MAS nurses showed that a high number of staff believed that oral health of dementia patients was clinically very important. This is essential as they consult with patients for longer than other clinicians, they build good relationships with them and their carers, and they also have the value of continuity of care. This finding demonstrates that they could potentially play a useful role in the dissemination of an oral health toolkit service promotion. All MAS staff were unaware of the current Delivering Better Oral Health toolkit,[1] this suggests that they may benefit from further detailed education in service provision for them to disseminate to their patients.

Overall, MAS staff rated their own oral health as good and few of them were putting off treatment recommended by their dentist. When requested to share opinions of local dental services, one respondent stated that 'the cost of dental care puts many patients off and the lack of NHS patient lists in many dental practices is a problem in some areas.' This could indicate that some vulnerable patients may face difficulty in accessing affordable necessary dental care.

Conclusion

Despite a high attendance rate reported by patients with a recent diagnosis of dementia, there is a concern that the necessary prevention advice needed for these patients is not necessarily being provided.

MAS nurses and other care staff could be trained on how to advise patients on preventative oral healthcare at the point of first

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contact. Emphasis should be made that oral health is an integral part of overall health and as such, can prevent additional suffering from oral problems.

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