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What are dental non-attenders' preferences for anxiety management techniques? A cross-sectional study based at a dental access centre.

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Abstract:

Objective:

Dental anxiety is a barrier to attendance. Dental non-attenders may seek emergency care and may prefer to receive anxiety management measures for treatment required. Little is know about the preferences of these dental non-attenders for different anxiety management techniques. Understanding such preferences may inform management pathways, improve experiences, alleviate anxieties and encourage a more regular attendance pattern. So, the aim of this study was to gain a greater understanding of the dental anxiety of patients attending a dental access centre for emergency dental treatment and to ascertain preferences for different anxiety management techniques.

Design:

Cross sectional study involving self-completed questionnaires and clinical observation.

Setting:

NHS Dental Access Centre, York, UK

Subjects and Methods:

200 participants not registered with a general dental practitioner (GDP), aged 18 years or over, experiencing pain, self- referred were recruited on a consecutive sampling basis. Participants completed a questionnaire eliciting demographic and dental history details, dental anxiety and preferences for dental anxiety management options.

Main Outcome Measures:

Correlation of Modified Dental Anxiety Scale (MDAS) with preference for different dental anxiety management techniques

Results:

No significant predictive factors were found that explained preferring local anaesthetic to sedation or general anaesthesia for restorations or extractions. Those highly anxious

were less likely to consider tell show do techniques (p =0.001) or watching explanatory videos (p = 0.004) to be helpful for overcoming their anxieties than the low or moderate anxiety groups.

Conclusions:

People attending access centres may represent a group who are unwilling to explore non-pharmacological methods to overcome their anxieties. This supports the need for sedation to provide treatment.

Future work may include exploring in more depth the thoughts and opinions of this group of patients to improve understanding of their complex dental attitudes. From this, more effective strategies may be developed to encourage regular dental attendance.

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Introduction:

According to the most recent Adult Dental Health Survey [1], dental health across the UK is improving with 71% of dentate adults having no visible caries, compared with 54% in 1998. In this survey, overall 12% of adults were classified as having extreme dental anxiety and 61% attend for regular check-ups. Dental anxiety is a complex, multi-dimensional, multi-factorial characteristic. It has been shown to be associated with many different factors including personality types, age and gender [1, 2]. Previous bad experiences together with how the bad experience is remembered, fear of pain, and general fears, such as fear of mutilation and suffocation, are significant factors for developing dental anxiety [3, 4, 5].

Dental anxiety is a major reason for avoidance of regular dental care [6, 7, 8], dental avoidance is also associated with social deprivation, low socio- economic status, family attendance patterns, ethnicity, ability to pay for treatment and younger age [9, 10, 11, 12, 13]. Those 'needing' treatment, as determined by a clinician, are less likely to seek regular care and more likely to only attend when experiencing problems [6, 7, 13].

Qualitative research carried out by Finch *et al.* aimed to investigate the concept of barriers, or obstacles, to receipt of dental care[14]. Cost and anxiety featured strongly in emerging patient-focused themes. However, there emerged a more complex, multifactorial concept involving physical barriers for patients, dentists perceiving inequalities of service provision, and society perception as a whole of insufficient political support from health care funding influencing the availability of dental services. The dentist-patient interaction was shown to be important and that barriers should be considered within a two-person framework (factors related to both dentist and patient).

It has been reported that dentally anxious patients visit the dentist less often and have higher numbers of decayed and missing teeth than non-anxious patients [6, 15, 16]. The

relationship between dental anxiety, dental avoidance and oral health has been described as a vicious cycle [6]. Those who are anxious are more likely to delay treatment attending only when they have a problem. This may require more complex treatment, which may in turn be a more traumatic experience, which feeds back into maintaining their anxiety.

By developing a greater understanding of coping strategies for anxious people, it may be possible to encourage more regular attendance patterns, so improving levels of oral health [9].

Miller describes a theory of how personality type affects information-seeking behavior and influences coping strategies[17]. Two personality types are described; 'monitors', people who seek information to cope with stress, and 'blunters', who avoid information when faced with a difficult situation. These two types may have different preferences and needs for anxiety management techniques and this suggests that different technqiues will need to be employed for different people.

Although there has been little or no research linking Miller's personality types with preferences, research has been carried out investigating preferences for non-pharmacological approaches to manage general anxiety associated with chronic pain, demonstrating that popular preferences include techniques such as biofeedback, yoga and hypnosis, whereas other techniques such as acupuncture and massage are not so popular[18]. To date though, there would appear to be very little research investigating preferences for non-pharmacological management of dental pain and anxiety.

The use of Complementary and Alternative Medicine techniques as an adjunct to conventional medicine and for management of pain has increased. It is reported that up to 40% of adults and 12% children in the United States are using CAM for symptom management in chronic pain[19].

Pharmacologically, dentally anxious patients say they would be more likely to visit the dentist if given a drug to make them feel less anxious [20]. However, the numbers expressing a preference for sedation for dental treatment may be up to three times greater than those actually receiving it [20]. Both high and low anxiety groups express interest in sedation, and this has been shown to increase if the treatment is perceived to be painful or unpleasant [21]. Thus preferences for treatment may vary according to the individual and proposed treatment, and may not always be related to anxiety levels.
In general there has been little research addressing the factors that influecne preferences for different anxiety management techniques, and the aim of this study was therefore to gain a greater understanding of the preferences for different anxiety management techniques of patients attending a dental access centre for emergency dental treatment and to ascertain the factors influencing such preferences.

Method:

Study design:

The work was designed as a cross-sectional study that combined observational and survey methods.

Sample:

The study population involved patients attending for emergency appointments at Monkgate Dental Access Centre in York, UK, during the period October 2011 to January 2012. A required sample size of 200 was calculated to enable regression analysis to be applied to data [22]. The established inclusion criteria were:

• Not registered with a general dental practitioner

• Aged 18 years or over

• Currently experiencing pain

• Self-referred

• Able to comprehend/ complete a questionnaire

A consecutive sampling technique was used to include all patients fulfilling the inclusion criteria on allocated data collection sampling sessions, according to availability of the researcher. On allocated sessions, the researcher assessed attending patients from computer appointment diaries and identified potential participants

Those meeting the inclusion criteria were approached by the researcher as they arrived for dental appointments and invited to participate. Those interested were given a verbal explanation and written participant information sheet. If they wished to proceed, written consent was obtained.

Questionnaires:

The questionnaire was piloted for a period of two weeks prior to commencement of data collection; no modifications were necessary.

During the study period, questionnaires were given to consented participants by the researcher to be completed prior to their dental appointment.

The questionnaire included demographic information such as gender, age and employment status. Other topics covered by the questionnaire included information with regard to participants pain history, dental history, preferences for treatment, reasons for not attending, dental anxiety levels and aetiology of dental anxiety, opinions on suggested management techniques to alleviate dental anxiety and demographic information.

Dental anxiety was measured using the previously validated Modified Dental Anxiety Scale (MDAS) [23, 24].

Scores were converted to 3 levels of dental anxiety as described by Humphris *et al*[23]:

• Low MDAS score of 5-11

• Moderate MDAS score of 12-18

• High MDAS score of 19-25

Dental examination:

During the emergency dental appointment, an oral health assessment was carried out using the following scores:

• Poor: visible multi-sextant mature plaque or calculus accumulation and / or pronounced gingivitis

• Fair: immature plaque accumulation and localised calculus deposits and / or mild gingivitis

• Good: minimal plaque or calculus, healthy gingival condition

Number of teeth, number of carious teeth and estimated number of unrestorable teeth (which was based on the subjective clinical experience of the examiner using cavity size and likelihood of pulp involvement as the two key indicators) were recorded.

All dental examinations were carried out by one operator (the researcher AH, a dentist by background) to exclude inter-examiner variability. The nature of the group meant that repeat attendance to measure intra-examiner reliability was not feasible. Following treatment, the researcher reviewed the patients' records to determine the treatment modality used for the participant during their emergency appointment, and what influenced this decision.

Ethical considerations:

The project was reviewed and given a favourable opinion by National Research Ethics Service Committee North West Greater Manchester (reference number: 11/NW/0636).

Data analysis:

Data were analysed using SPSS Statistics version 19 software. Frequency tables and cross tables were produced, means calculated and inferential tests such as Chi square and Spearman's correlation coefficient used. Binary logistic regression analysis was applied to test anxiety levels and preferences for treatment against predictor variables. A significance level of $p<0.05$ was used.

Results:

During the investigation period, 200 patients took part in the study. Of the 211 patients that were approached, all agreed to participate, but eleven were excluded. Three participants were excluded because they were unable to sufficiently comprehend a questionnaire, seven had already filled out a questionnaire returning for another emergency appointment, and one wanted to complete the questionnaire at home. Of all respondents, 41.5% had visited Monkgate for an emergency appointment previously.

Means and frequencies:

Table 1 demonstrates demographic frequencies and dental history for respondents in comparison to regional (Yorkshire) averages. In comparison to regional averages, the study population demonstrated a greater proportion of younger age groups, umemployed and exempt from payment. The study population also showed a greater number reporting a period of longer than two years since seeing a dentist, and receiving a filling or extraction. The ratio of males to females was very similar in both the study and population.

Preferences for treatment:

When asked about receiving a filling, 71.5% would accept local anaesthetic alone with

the remaining 28.5% preferring sedation or general anaesthetic. For an extraction, 23% would accept local anaesthetic alone with 77% stating a preference for sedation or general anaesthetic.

A large proportion stated they would like to see a dentist regularly for check-ups (89.5%), with only 10.5% stating that they would not. Reasons for not attending, selected from a pre-defined list, included being unable to register (38.6%), anxiety (24.6%), and cost (25.1%)

Anxiety status:

Table 2 gives frequency information on anxiety status for participants compared to regional averages.

Dental status:

The mean number of teeth present (26.6) was similar to national averages (25.7) but the mean number of carious teeth (3.7) was greater than the national average (0.8)[1] . The mean number of unrestorable teeth was 1.9. Oral hygiene levels were compared to national averages; 48% were poor compared to a national average of 42.5%, 37% average compared to 39% nationally and 15% good compared to a national average of 18.5%[1] .

The mean pain score was 6.73 (SD 2.17) and mean anxiety score was 14.23 (SD 5.87).

Treatment pathway and outcome:

Over half of respondents received treatment with local anaesthetic (60%), only 5% were scheduled to have intravenous sedation (and were placed on a waiting list for this), 2% received no treatment and 33% received other treatment (including antibiotics, fillings

with no local anaesthetic and dry socket management).

Pain (59.5%) and anxiety (36.5%) were the most frequent reasons for participants having a particular treatment or management outcome.

Consideration of non-pharmacological management techniques:

Table 3 shows frequencies for how helpful respondents would consider different non-pharmacological techniques to be.

Correlations with anxiety levels:

Chi-square analysis and Spearmans correlation coefficient were used to test relationships between variables. No significant correlations were found between anxiety levels and number of teeth, number of carious teeth, number of unrestorable teeth or age. However, females were found to be significantly more likely to have high levels of anxiety ($p<0.001$).

Correlations with preferred anxiety management techniques:

A number of correlations were positive and potentially clinically significant but were not statistically significant. These included positive correlations between: high anxiety scores and how helpful respondents would consider anxiety management techniques to be, ($p=0.13$); low anxiety and a preference of local anaesthetic for extractions ($p=0.38$); high anxiety and poor oral hygiene levels ($p=0.71$)

Table 3 demonstrates the correlations between anxiety levels and how helpful participants would consider different non-pharmacological techniques to be. A significant negative correlation was found between high anxiety scores and finding the following techniques helpful: tell show do technique ($p=0.001$) and watching explanatory videos ($p=0.004$).

Correlation of helpfulness scores between pairs of non-pharmacological management techniques were tested against the value 1 (which represented ‘very unhelpful’ on the questionnaire). Large numbers of significant positive correlations between pairs were found, indicating that the same respondents may answer ‘very unhelpful’ to all suggestions (thus supporting the argument for sedation).

Factors influencing anxiety and preference for LA alone versus sedation:

Binary logistic analysis was used to test low anxiety (versus high anxiety), preference for fillings under local anaesthetic (versus sedation or general anaesthetic) and preference for extractions under local anaesthetic (versus sedation or general anaesthetic) with predictor variables.

Table 4a and b show the binary logistic regression analysis testing preferences for fillings and extractions under local anaesthetic (versus sedation or general anaesthetic) with predictor variables. No significant predictor variables were found for those who would prefer local anaesthetic for fillings or for extractions. Although findings did not reach a significant level, those who said they would prefer local anaesthetic for extractions were more likely to have had an extraction less than 2 years previously ($p=0.48$) and have a pain score of less than 5 ($p=0.54$) (Cox and Snell $R^2 =0.063$).

Binary logistic regression analysis of low anxiety (versus high anxiety) against predictor variables showed a significant relationship between those with low anxiety and the following characteristics: being male ($p=0.001$), having seen a dentist less than 2 years previous ($p=0.05$) and receiving a filling less than 2 years previous ($p=0.04$) (Cox and Snell R2 =0.197)

Discussion:

The study shows the dental history, preferences for treatment, anxiety levels and aetiology in a group of irregular attenders. Relationships were analysed enabling conclusions to be drawn to support management strategies for this population. Before considering the implications of these results, it necessary to consider the limitations of the study.

For practical reasons, this study collected data from a population of patients with the required characteristics who attended on specific days of the week within a given time period. This is not the ideal method of selecting respondents and may have introduced coverage bias; for example, patients attending on other days may have different emergencies, although experience suggests that this is not the case. However, the study population was similar to the regional population in terms of proportions of gender and employment status, except that there were greater proportions of unemployed and people who were exempt from payment. Nearly two-thirds of respondents were between 18-35 years of age, supporting previous findings that younger age groups attend the dentist less regularly [12, 13].Overall, the representativeness may lead to problems with generalisabilty of the findings but the regression analysis will account for some of this and so although absolute findings may not be reliable, relative findings should be.

In addition, utilisation of a structured survey may have introduced response bias and may have given a limited picture of views and opinions of the study population. Using a more qualitative approach in future studies, would enabled participants to expand on ideas rather than being prompted and given suggestions for responses.

An unexpected finding was that 60.5% of respondents had seen a dentist in the past 2 years, which although lower than the 78% of general attendance in the region, is not as much of a difference as one would expect. The explanation for the difference may be that 73.5% of respondents' last visit was for emergency treatment, whereas 70% of the

regional population made a routine visit.

The proportion of respondents who were highly anxious is considerably higher than the findings of the Adult Dental Health Survey [1]. Fear of pain was the most frequently reported reason for the cause of anxiety, as has previously been shown [3, 5].

Those with high levels of anxiety were significantly more likely to want help to overcome their anxiety. Although over 70% of patients thought that anxiety management would be helpful in reducing the amount of anxiety they felt, the proportion of patients who thought that suggested anxiety management techniques would be helpful was considerably lower. Very few had other suggestions as to how their anxiety could be overcome.

One of the most interesting findings was that respondents who were highly anxious were significantly more likely to consider either the dentist spending more time with them, or using a tell show do technique, to be unhelpful. This may be a result of personality differences described in the literature [2]. Perhaps those attending access centres are more likely to have an externalist personality type, and consider their anxiety to be the way that they are and that no action taken by them will change that. Personality type has been shown to influence coping strategies, dentally anxious non-attenders may be more likely to be a 'blunter', and avoid information when faced with the stress of a dental visit[17]. They would rather ignore information that is being given to them and be told as little as possible. This would explain why the dentally anxious in the study population felt that watching explanatory videos would be very unhelpful. Some patients may prefer to get the visit over as quickly as possible, but long term this does not help to reduce anxiety levels or promote regular attendance.

The highly anxious tended to show poorer levels of oral hygiene. However, unlike other studies, there were no significant relationships found between anxiety levels and numbers of teeth present, decayed or unrestorable [6, 15, 16]. This is surprising given the

attendance patterns and current pain experience of this group.

Males were significantly more likely to have low anxiety as were those who had visited a dentist or received a filling within two years reinforcing the relationship between avoidance of care and high anxiety [6, 7, 8].

Preferences for treatment varied according to the procedure, which is consistent with previous studies [20, 21]. Over three-quarters said they would prefer sedation or general anaesthetic for an extraction, compared to 20% and 30% respectively for scale and polish and fillings, suggesting that extractions are considered to be more unpleasant or anxiety evoking than other procedures.

Those stating a preference for local anaesthetic (rather than sedation or general anaesthetic) for extraction were more likely to have had an extraction in the previous two years, and have a pain score under five. Delaying treatment with the increased anticipation of how unpleasant the treatment may be, may increase the demand to be sedated or asleep. Perhaps those who have had an extraction more recently remember the experience was not as unpleasant as they thought, whereas with time, the memory of how the experience was perceived is distorted in a negative way. People with a higher pain score were less likely to accept local anaesthetic for an extraction. This may be because the anticipation of an unpleasant experience is greater if the person is suffering greater levels of pain.

In conclusion, people attending the study Access Centre demonstrate a greater proportion of high dental anxiety than is seen nationally. Nearly 70% wanted help to overcome their anxiety but this was not supported with suggested ideas of non-pharmacological techniques. Moreover, there were few significant findings between these relationships suggesting that patients attending the centre may represent a group

of people that consider themselves beyond help. This lends support for the use of sedation to allow such patients to have their treatment carried out. If services including non- pharmacological anxiety management techniques are being developed, some education about these would need to be included.

In the future, it may be helpful to investigate in more depth why anxious patients who do not attend a dentist regularly do not consider non- pharmacological management techniques to be helpful in reducing their anxiety levels. A greater understanding would help build strategies to encourage people to believe that they can overcome their anxieties.

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References:

1. Cooke P, Sullivan I, Lader D, Beavan-Seymour C, Chenery V. Adult Dental Health survey. The Health and Social Care Information Centre. 2011; ISBN 978-1-84636-492-1.

2. Weiner A A, Sheehan D J. Etiology of dental anxiety: psychological trauma or CNS chemical imbalance? *General Dentistry* 1990; **22:** 39-43.

3. Bergrenn U. General and specific fears in referred and self-referred adult patients with extreme dental anxiety. *Behaviour Research and Therapy* 1992; **30 (4):** 395-401.

4. Davey G C L. Dental phobias and anxieties: evidence for conditioning processes in the acquisition and modulation of a learned fear. *Behaviour Research and Therapy* 1989; **27 (1):** 51-58.

5. McNeil D W, Berryman M L. Components of dental fear in adults? *Behaviour Research and Therapy* 1989; **27 (3):** 233-236.

6. Armfield J M, Stewart J, Spencer A J. The vicious cycle of dental fear: exploring the interplay between oral health, service utilisation and dental fear. *BioMedCentral Oral Health* 2007; **7 (1):** doi:10.1186/1472-6831-7-1.

7. Schuurs A H B, Duivenvoorden H J, Thoden vanVelzen S K, Verhage F. Three factors predicting irregular versus regular dental attendance: a model fitting to empirical data. *Community Dentistry and Oral Epidemiology* 1980; **8 (8):** 413-419.

8. Thomson W M, Stewart J F, Carter K D, Spencer A J. Dental anxiety among

Australians. *International Dental Journal* 1996; **46 (4):** 320-324.

9. Davidson P L, Anderson R M. Determinants of dental care utilization for diverse ethnic and age groups. *Advanced Dental Research* 1997; **11 (2):** 254-262.

10. Hagglin C, Hakeberg M, Ahlqwist M, Sullivan M, Beggren U. Factors associated with dental anxiety and attendance in middle-aged and elderly women. *Community Dentistry and Oral Epidemiology* 2000; **28:** 451-60.

11. Pavi E, Kay E J, Stephen K W. The effect of social and personal factors on the utilisation of dental services in Glasgow, Scotland. *Community Dental Health* 2005; **12 (4):** 208-15.

12. Scheutz F, Heidmann J. Determinants of utilization of dental services among 20- to 34- year- old Danes*. Acta Odontology Scandanavica* 2001; **59:** 201-11.

13. Sohn W, Ismail A I. Regular dental visits and dental anxiety in an adult dentate population*. Journal of the American Dental Association* 2005; **136:** 58-66.

14. Finch H, Keegan J, Ward K. Barriers to the receipt of dental care – a qualitative research study. London, Social and Community Planning Research 1988.

15. Samorodnitzky G R, Levin L. Self-assessed dental status, oral behaviour, DMF, and dental anxiety*. Journal of Dental Education* 2005; **69 (12):** 1385-1389.

16. Schuller A A, Willumsen T, Holst D. Are there differences in oral health and oral health behaviour between individuals with high and low dental fear? *Community*

Dentistry and Oral Epidemiology 2003; **31 (2):** 116-121.

17. Miller S M. Monitoring and blunting: validation of a questionnaire to assess styles of information seeking under threat 1987; *Journal of Personal and Social Psychology* **52(2):** 345-353.

18. Tsao J C, Meldrum M, Kim S C, Jacob M C, Zeltzer L K. Treatment preferences for CAM in children with chronic pain 2007; *Evidence Based Complementary and Alternative Medicine* **4(3):** 367-374

19. Edwards E. The role of complementary, alternative and integrative medicine in personalised health care 2012; *Neuropsychopharmacology* **37(1):** 293-295

20. Dionne R A, Gordon S M, McCullagh L M, Phero J C. Assessing the need for anesthesia and sedation in the general population. *Journal of the American Dental Association* 1998; **129:** 167-173.

21. Chanpomg B, Haas D A, Locker D. Need and demand for sedation or general anaesthesia in dentistry: a national survey of the Canadian population. *Anaesthetic Progress* 2005; **52 (1):** 3-11.

22. Peduzzi P, Concato J, Kemper E, Holford T R, Feinstein A R. A simulation study of the number of events per variable in logistic regression analysis. *Journal of Clinical Epidemiology* 1996; **49:** 1373-1379.

23. Humphris G M, Morrison T, Lindsay S J. The modified dental anxiety scale: validation and United Kingdom norms. *Community Dental Health* 1995; **12 (3):** 143-145.

24. Newton J T, Buck D J. Anxiety and pain measures in dentistry: a guide to their quality and application. *Journal of the American Dental Association* 2000; **131 (10):** 1449-1457.

Table 1: Demographic frequencies and dental history for participants compared to Yorkshire averages:

	Variable	Study proportion (%)	Yorkshire proportion (%)
Gender	Male	45.5	49.2 [1]
	Female	54.5	50.8 [1]
Age (years)	18-35	65.5	14.9 [1]
	>35	34.5	62.6 [1]
Employment	Employed	52.0	62.0 [2] *
	Unemployed	48.0	10.1 [2] *
Exemption status	Pays	56.5	72.6 [3]
	Exempt	43.5	27.4 [3]
Length since last dental visit (years)	<2yr	60.5	78.0 [4]
	>2yr	39.5	22.0 [4]
Length since last filling (years)	<2yr	24.0	
	>2yr	76.0	
Length since last extraction (years)	<2yr	21.0	
	>2yr	79.0	
Purpose of last dental visit	Routine	26.5	70.0 [4]
	Emergency	73.5	30.0 [4]

[1] Population estimates 2010 North Yorkshire County Council Parish. Policy, performance partnerships. Chief/executive's group.

[2] Statistics Bulletin: Regional Labour Market Jan 2012. Office for National Statistics/Work/Pension

[3] NHS Dental Statistics for England 2007/08 The NHS Information Centre

[4] Adult Dental Health Survey 2009

* Figures do not add up to 100 as other categories exist other than employed / unemployed

Table 2: Frequencies of anxiety status for participants compared to Yorkshire averages:

Key: [1] Adult Dental Health Survey 2009

	Variable	**Study proportion (%)**	**Yorkshire proportion (%)**
Anxiety level	Low	40.0	47.0 [1]
	Moderate	27.5	36.0 [1]
	High	32.5	18.0 [1]
Cause of dental anxiety	Fear of pain	48.5	
	Bad experience	29.0	
	Fear of unknown	29.0	
	Childhood experience	22.5	
	Other people negative	9.5	
	Parents anxious	5.0	
	Other	6.0	
Those who would consider anxiety management to be helpful	Yes	73.7	
	No / not sure	26.3	

Table 3: Correlations between anxiety score with how helpful participants would consider non-pharmacological anxiety management techniques to be:

		Anxiety score	Hypnotherapy	Would find anxiety management helpful	More time spent	Tell show do	Explanatory videos	Psychology	Other technique
Anxiety score	Correlation coefficient	1.00	-0.02	0.24	-0.06	-0.25	-0.21	0.06	0.50
	Significance level (2-tail)	0.00	0.78	0.00	0.40	0.00	0.00	0.44	0.15
	N	200	179	175	181	185	178	175	10
Hypnotherapy	Correlation coefficient	-0.02	1.00	0.10	0.14	0.16	0.28	0.40	-0.14
	Significance level (2-tail)	0.78	0.00	0.24	0.06	0.03	0.00	0.00	0.71
	N	179	179	159	177	177	177	175	9
Would find anxiety management helpful	Correlation coefficient	0.24	0.10	1.00	0.27	0.19	0.07	-0.00	0.50
	Significance level (2-tail)	0.00	0.24	0.00	0.00	0.02	0.36	1.00	0.20
	N	175	159	175	161	162	157	155	9
More time spent	Correlation coefficient	-0.06	0.14	0.27	1.00	0.48	0.34	0.23	0.15
	Significance level (2-tail)	0.40	0.06	0.00	0.00	0.00	0.00	0.00	0.73
	N	181	177	161	181	178	177	175	8
Tell show do	Correlation coefficient	-0.25	0.16	0.19	0.48	1.00	0.52	0.20	0.37
	Significance level (2-tail)	0.00	0.03	0.02	0.00	0.00	0.00	0.01	0.37
	N	185	177	162	178	185	178	175	8
Explanatory videos	Correlation coefficient	-0.21	0.28	0.07	0.34	0.52	1.00	0.40	-0.53
	Significance level (2-tail)	0.00	0.00	0.36	0.00	0.00	0.00	0.00	0.17
	N	178	177	157	177	178	178	175	8
Psychology	Correlation coefficient	0.06	0.40	-0.00	0.23	0.20	0.40	1.00	0.22
	Significance level (2-tail)	0.44	0.00	0.97	0.00	0.00	0.00	0.00	0.63
	N	175	175	155	175	175	175	175	7
Other technique	Correlation coefficient	0.50	-0.14	0.48	0.15	0.37	-0.53	0.22	1.00
	Significance level (2-tail)	0.15	0.71	0.20	0.73	0.37	0.17	0.63	0.00
	N	10	9	9	8	8	8	7	10

Table 4a: Binary logistic regression analysis testing preference for treatment with local anaesthetic (versus sedation or general anaesthetic) for fillings against predictor variables:

	B coefficient (intercept)	**Standard Error**	**Wald chi ^{2}**	**Significance level**	**Exponential of B coefficent**
Male	0.375	0.391	0.921	0.337	1.455
Pain score <5	-1.007	0.812	1.536	0.215	0.365
Time since last dental visit <2yr	0.294	0.456	0.416	0.519	1.342
Last dental visit routine	-0.826	0.538	2.358	0.125	0.438
Time since last fill <2yr	-0.289	0.540	0.286	0.593	0.749
Time since last extraction <2yr	-0.322	0.501	0.412	0.521	0.725
Considered anxiety management unhelpful	-0.136	0.477	0.081	0.775	0.873
Age <35yr	0.621	0.406	2.336	0.126	1.861
Employed	-0.497	0.439	1.278	0.258	0.609
Oral hygiene poor	0.144	0.386	0.139	0.710	1.155
Pays for treatment	-0.491	0.442	1.231	0.267	0.612

Table 4b: Binary logistic regression analysis testing preference for treatment with local anaesthetic (versus sedation or general anaesthetic) for extractions against predictor variables:

	B coefficient (intercept)	**Standard Error**	**Wald chi ^{2}**	**Significance level**	**Exponential of B coefficent**
Male	0.082	0.348	0.056	0.814	1.085
Pain score <5	-1.319	0.686	3.702	0.054	0.267
Time since last dental visit <2yr	0.007	0.415	0.000	0.986	1.007
Last dental visit routine	-0.191	0.435	0.193	0.660	0.826

Time since last fill <2yr	0.179	0.483	0.137	0.712	1.195
Time since last extraction <2yr	-0.921	0.466	3.902	0.048	0.398
Considered anxiety management unhelpful	0.123	0.413	0.089	0.765	1.131
Age <35yr	0.525	0.357	2.159	0.142	1.690
Employed	-0.341	0.394	0.751	0.386	0.711
Oral hygiene poor	-0.170	0.347	0.241	0.623	0.844
Pays for treatment	-0.228	0.398	0.328	0.567	0.796