Community Dental Health (2012) **29,** 198–202
Received 5 November 2010; Accepted 25 June 2011

© BASCD 2012
doi:10.1922/CDH_2761Porritt05

A service evaluation of patient pathways and care experiences of dentally anxious adult patients

J. Porritt, S.R. Baker and Z. Marshman

Unit of Dental Public Health, University of Sheffield, Sheffield, UK

Objective: To investigate the current patient pathways used by dentally anxious adults in Sheffield and identify how the patient experience could be improved. ***Design:*** Questionnaires gathered stakeholder perceptions of referral pathways and services for dentally anxious adult patients. Completed questionnaires were returned by 113 dentally anxious patients who had engaged with specialised dental services and 111 general dental practitioners (GDPs) (28% and 52% response rates). ***Results:*** The recommendations for improving dental care experience of the anxious were: increased guidance and information to GDPs regarding available care pathways; improved availability of psychological services; and more opportunities and choice for patients in the long term management of dental anxiety. ***Conclusions:*** The findings from the service evaluation suggest ways in which dental services could be developed to improve the care experiences of dentally anxious adult patients.

Key words: *Service evaluation, dental anxiety, anxiety management, patient experiences*

Introduction

Dental anxiety is a common problem with major implications for patients, dental professionals and commissioners of dental services. Dental anxiety can be a significant barrier to the completion of treatment with half of highly anxious patients missing appointments because of fear (Chanpong *et al*., 2005). These adults have more decayed and missing teeth than other patients and worse oral health related quality of life when controlling for factors such as socioeconomic and oral health status (McGrath and Bedi, 2004; Schuller *et al*., 2003). Treating anxious patients can also be time consuming, costly and a cause of occupational stress for the dental team (Moore and Brodsgaard, 2001).

Dental anxiety reaches a clinically significant level (dental phobia) when a number of specific criteria are met such as avoidance or a significant impact on daily functioning (De Jongh *et al*., 2005). Therefore, the assessment of dental anxiety is an important aspect of a dental professional's work and contributes to treatment planning (Dailey *et al*., 2002; Newton and Buck, 2000). It is proposed that patients with low levels of treatment need who experience low to moderate anxiety should be managed within the dental practice using behavioural techniques but that those with high anxiety should be referred for additional support for their anxiety (De Jongh *et al.*, 2005). However, dental anxiety assessments are not regularly incorporated into General Dental Practitioners' (GDPs) practice; fewer than 20% of UK GDPs use any formal method of assessment (Dailey *et al*., 2001).

GDPs have the option of referring anxious patients to specialised clinics, such as those provided by salaried services or dental hospitals. The majority of patients who are referred to specialised services for their dental anxiety are referred for pharmacological interventions, reflecting the dependence on these methods within dentistry (McGoldrick *et al*., 2001). However, research has indicated that dentally anxious patients who receive treatment using pharmacological methods are less likely to attend future dental appointments and more likely to report a higher level of anxiety following treatment than people who receive psychological interventions (Jöhren *et al,* 2000).

Therefore, the referral decisions made by GDPs and the management options offered to anxious patients have implications for patients' long term care and for demands on specialised dental care services. Within Sheffield specialised services for dentally anxious patients, which include Sheffield Salaried Primary Care Dental Services (SSPDCS) and Charles Clifford Dental Hospital (CCDH), offer a range of pharmacological and non-pharmacological anxiety management interventions for anxious patients (Figure 1). However, demands on these services have increased with waiting lists reaching unacceptable lengths for patients. The need for the service evaluation of the management of anxious patients reported in this paper was identified by NHS Sheffield who commission these services. The findings of the evaluation would then inform service re-design to ensure patients' needs were met.

Method

An evaluation of the services available for dentally anxious adult patients in Sheffield was conducted between May and July 2009. As a service evaluation is not classified as research this project did not require ethical review by an NHS research ethics committee. Perspectives from a variety of stakeholders are integral

Correspondence to: J Porritt, Unit of Dental Public Health, University of Sheffield, Claremont Crescent, Sheffield. S10 2TA. UK. Email: jenny.porritt@sheffield.ac.uk

to the future development of services (Green and South, 2006) and therefore both dentally anxious patients' and GDPs' perceptions of the referral pathways and services available to anxious patients were the focus of the evaluation. A Project Advisory Group (PAG) was convened to assist in the design and organisation of the service evaluation. The PAG included a patient representative; the Clinical Director of SSPDCS; a Dental Practitioner from the General Dental Service; a Consultant in Dental Public Health; and a Consultant in Special Care Dentistry from SSPDCS.

Patients over the age of 16 years, who had received dental treatment from SSPDCS and CCDH, and had been referred as suffering from dental anxiety/phobia were identified through the Patient Administration Systems of the specialised dental services. A sample size of 100 patients was deemed adequate and therefore, assuming a 25% response rate, 400 of the most recent attendees at the SSPDCSs (n=200) and the CCDH (n=200) were sent a service evaluation questionnaires to complete. All 213 GDPs on the performers list of NHS Sheffield were posted service evaluation questionnaires to complete. Due to the limited resources available to conduct the service evaluation only one mailing of questionnaires was undertaken. Patients and GDPs were informed that the service evaluation sought to investigate how the dental services in Sheffield could be improved to meet the needs of dentally anxious patients and were advised that that their participation in the study was voluntary.

The service evaluation questionnaires assessed a variety of indictors derived from the dental literature and agreed upon by the PAG. The patient questionnaire sought the patient's age and gender. Patient experiences and satisfaction relating to key indicators were explored by asking patients: which interventions their GDP had discussed with them before referring them to the specialised dental services; whether they were happy to be referred to the specialised dental service for treatment; and their satisfaction with the services they received throughout their care. Patients were also asked *'Overall how do you feel your dental care could have been improved?'* The questionnaire included the Corah's Dental Anxiety Scale-Revised (Ronis, 1994). The scale's 4 items assess an individual's level of anxiety with scale items scored: 1 (relaxed) to 5 (so anxious that I sometimes break out in a sweat or almost feel sick). Total scores are interpreted in the following ways: 4-8 low anxiety; 9-12 moderate anxiety; 13-14 high anxiety; and 15-20 severe anxiety/phobia. The questionnaire was piloted with patient representatives to ensure that the areas assessed within the evaluation reflected the issues which were important to patients themselves.

The questionnaire for GDPs collected demographic information including the practitioner's age and gender. Information relating to performance indicators was obtained by asking GDPs to indicate: which NHS services they provided for their dentally anxious adult patients; whether they assessed dental anxiety; and which factors influenced their decision to refer a dentally anxious patient to specialised services. GDPs were also asked the open ended question: *'How do you think GDPs in Sheffield could be supported in the management of dentally anxious patients?'*

Descriptive analysis was performed on quantitative data and qualitative data was themed by a member of the research team into categories using simple content analysis. The categories generated were then reviewed by an independent researcher. Referral, treatment and service information was also obtained from the information and administration departments of the specialised dental services.

Results

Referral and patient pathways available to GDPs and dentally anxious adult patients were detailed using service information obtained from the specialised services. The data revealed a series of available pathways, through which dentally anxious adult patients could access dental services within Sheffield (Figure 1). Interestingly, an examination of the referral pathways highlighted that the only referral route into psychotherapy services for dentally anxious patients was via the SSPDCS.

Completed questionnaires were returned by 113 patients (response rate 28%) of whom 56 (50%) had received treatment from SSPDCS and 57 (50%) from CCDH. The age of participants ranged from 17-83 years (mean 41.6 years, sd 13.6) with 77% being female. The self-reported anxiety levels of these patients, at the time they participated in this service evaluation, can be seen in Table 1.

The majority of patients reported that they were happy to have been referred to specialised services for their dental treatment (82%). However, 43% of the patients could not recall the GDP, prior to such referral, discussing any of the anxiety management options which would be available to them. The most common intervention to be discussed with patients was IV sedation (39%) and only 7% of patients recalled psychological therapy being discussed as an option prior to referral. Within specialised services the interventions most commonly discussed and received were intravenous sedation and additional time (see Table 1). Overall, a high percentage of the patients (96%) who had engaged with the specialised dental services felt satisfied with the care they had received. However, patient recommendations for improving the care experience included shorter waiting times and easier access to the specialised services (15%).

"More dentists so you don't have to wait as long. You are already anxious without waiting 6 months for an appointment"

Almost a fifth of patients felt that dental care for anxious patients could be improved by more effective dentist-patient communication (18%) with shared decision making and clearer explanations of treatment procedures being among the suggestions from patients.

"Offer all the intervention options. Explain the operation in detail"

In addition, 13% of patients felt that more treatment options, such as psychological support, should be available for anxious patients. Increased resources within general dental practices were also discussed as a possible way to improve care for dentally anxious adults (3%).

Of the 213 GDPs who were sent questionnaires 111 participated in the service evaluation (52%). GDPs ranged from 24-68 years old (mean 43.2 years, sd 10.9) and

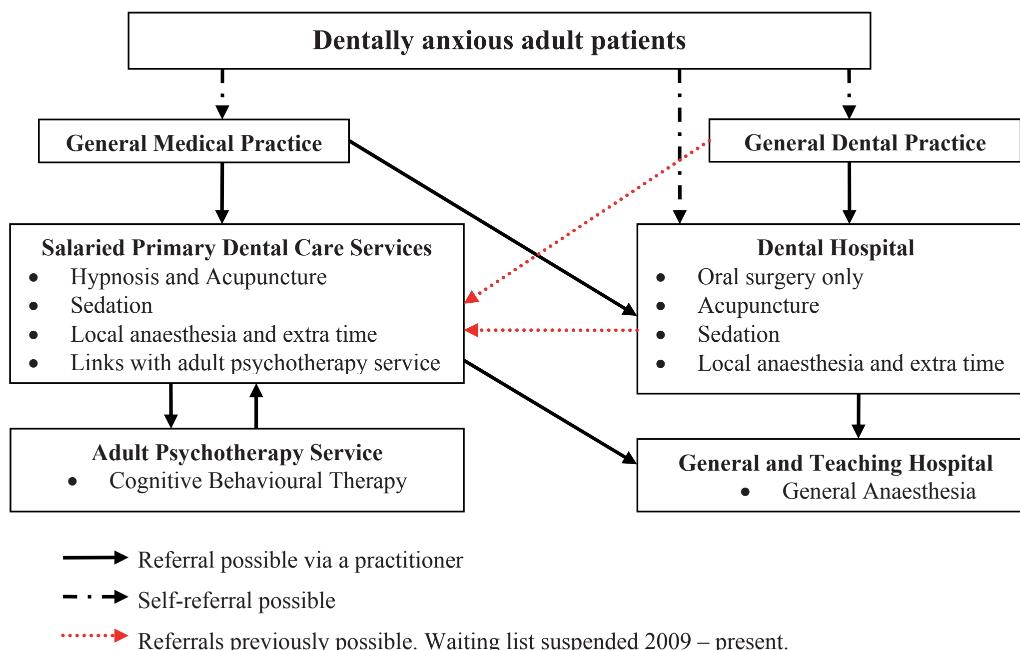

Figure 1. Referral pathways available for dentally anxious adult patients in Sheffield in May 2009 – July 2009

Table 1. Patients self-reported anxiety level and the variety of management options discussed and received by anxious patients

	Proportion of patients	
	Salaried Service n=56	*Dental Hospital n=57*
*Anxiety **		
Low anxiety	--	7%
Moderate anxiety	14%	42%
High anxiety	19%	15%
Severe anxiety/phobia	62%	35%
Management options discussed		
No intervention discussed	5%	2%
Extra time	68%	19%
Intravenous sedation	77%	88%
Inhalation sedation	66%	23%
Psychological therapy	34%	4%
General anaesthesia	4%	2%
Hypnosis	30%	5%
Acupuncture	--	14%
Management options received		
No intervention received	2%	4%
Extra time	61%	18%
Intravenous sedation	43%	77%
Inhalation sedation	36%	--
Psychological therapy	11%	4%
General anesthesia	--	--
Hypnosis	7%	2%
Acupuncture	--	14%

* Corah's Dental Anxiety Scale-Revised (Ronis, 1994)
Percentages are rounded to integers and so may not total 100%

most were male (76, 68%). The majority of participating GDPs offered routine care and additional time to their NHS patients with dental anxiety (95% and 69%, respectively). Eleven GDPs offered oral sedation, 6 offered inhalation sedation, 2 provided intravenous sedation and 1 had provided hypnosis.

The majority of practitioners did not use any assessment methods with patients (79%). In the past year only 23 GDPs (21%) indicated that they had not referred any of their dentally anxious patients to specialised dental services. The most common factor which influenced a referral decision was insufficient skills/knowledge of sedation (71%), followed by lack of time (62%), the dental contract (51%), lack of equipment (37%) and lack of psychological knowledge (22%). GDPs reported feeling frustrated that there were sometimes no services accepting referrals for dentally anxious patients due to strict referral criteria or closed waiting lists and felt that access to specialised services for dentally anxious adults should be improved (51%).

It was felt that there should be clearer guidance on referral criteria for specialised services and referral pathways available for dentally anxious patients (9%):

"Template of appropriate questionnaire/flow chart to know when and where to refer for what treatment"

Many of the GDPs felt that changes to the dental contract could improve how they are able to manage dentally anxious patients (22%). Providing financial incentives to GDPs for time spent with anxious patients was suggested:

"Provide resources to those practices offering sedation to expand their services fully. The NHS has ignored the treatment of anxious adults in general practice"

There was also the suggestion that there should be additional courses, training and information available for GDPs on managing anxiety and sedation (17%) and it was proposed that a select number of practices throughout

the city could be skilled in the management of dentally anxious patients and accept referrals from other GDPs.

Discussion

Almost all of the patients who participated in the service evaluation were satisfied with the dental care they received. Despite the majority of GDPs referring patients for specialised services regularly and the recognition that referrals should be based on patient assessments (General Dental Council, 2008; Dailey *et al*., 2002; Newton and Buck, 2000) only a minority of GDPs assessed patient anxiety prior to making a referral. It is argued that it would be difficult for GDPs to make informed decisions about the most appropriate pathway of care for their dentally anxious patient without conducting an assessment of the severity of the patients' dental anxiety.

A problem highlighted by GDPs was the shortage of services accepting referrals for dentally anxious patients and a proportion of patients also reported as an issue lengthy waiting lists and difficulties accessing specialised services. Whilst pharmacological techniques are appropriate for a proportion of anxious patients with high levels of treatment need, it has been proposed that these interventions only offer short-term solutions for the management of the patient's dental anxiety. Therefore, GDPs have a responsibility to provide patients with explanations about alternative methods of anxiety control before a decision to treat or refer the patient for a pharmacological intervention can be taken (Coulthard, 2006). However, over 40% of patients did not recall their GDP discussing possible treatment options with them prior to referral; possibly because GDPs felt they lacked clear information about the services available for dentally anxious patients.

No referral route into psychotherapy services existed for GDPs or the dental hospital and therefore only patients engaged with the salaried dental service were able to access psychological support for their dental anxiety. It is argued that dental services which rely on a predominantly pharmacological approach for the management of anxious adults will struggle to meet the long term needs of dentally anxious patients. It is, therefore, proposed that more psychological interventions should be offered to patients in both primary and specialised dental care settings. This could be achieved by raising dental professionals' awareness of psychological resources available within the voluntary sector (e.g. leaflets, on-line support groups) and statutory sector (British Psychological Society, 2009) or the provision of in house psychological support for dentally anxious patients.

It must be recognised that the anxious patients who participated in this service evaluation will not be representative of the dentally anxious adult population. The response rate of patients was relatively low and it is possible that the views of patients who did not participate in the service evaluation may not have been represented within this paper. In addition only those patients who had successfully engaged with specialised dental care services were surveyed. However, the results as interpreted by the PAG provide a basis on which service can begin to be re-designed

Recommendations

The following recommendations emerged from the findings of the service evaluation:

- GDPs should be encouraged to conduct an assessment of a patient's dental anxiety, using a valid and reliable measure, prior to treatment planning/referral to specialised services.
- Referral pathways and referral criteria appropriate for anxious patients should be made available to GDPs.
- Dental care professionals need to discuss the variety of treatment options available with anxious patients and provide clear explanations of the treatment processes.
- Additional training for GDPs on the management of dentally anxious patients including sessions on sedation should be made available.
- Provision of psychological support for anxious patients should be increased and made available to anxious patients within both primary and specialised dental care services.

Conclusion

Current services in Sheffield rely predominantly on pharmacological approaches for the management of anxious adults, without assessment of the severity of patients' anxiety. Referral pathways should be re-designed to ensure a variety of management options are available for patients including the provision of psychological support.

Acknowledgements

We are grateful to NHS Sheffield for commissioning this service evaluation and acknowledge the valuable contributions made by the members of the Project Advisory Group: Enid Hirst; Dr Nicole Dunning; Dr Peter Bateman and Dr Richard Taylor who helped plan and implement the service evaluation. We also thank the patients and professionals who have contributed to this service evaluation through sharing their perspectives and experiences.

References

British Psychological Society (2009): *A Guide to Commissioners of Clinical Psychology Services: Briefing Paper No. 11.* Leicester: British Psychological Society.

Chanpong, B., Haas, D.A. and Locker, D. (2005): Need and demand for sedation or general anesthesia in dentistry: a national survey of the Canadian population. *Anesthesia Progress* **52,** 3-11.

Coulthard, P. (2006): *Conscious Sedation in Dentistry - Dental Clinical Guidance.* Dundee: Scottish Dental Clinical Effectiveness Programme.

Dailey, Y.M., Humphris, G. M. and Lennon, M.A. (2001): The use of dental anxiety questionnaires: a survey of a group of UK dental practitioners. *British Dental Journal* **190,** 450-453.

Dailey, Y.M., Humphris, G.M. and Lennon, M.A. (2002): Reducing patients' state anxiety in general dental practice: a randomised controlled trial. *Journal of Dental Research* **81,** 319-322.

De Jongh, A., Adair, P. and Meijerink-Anderson, M. (2005): Clinical management of dental anxiety: what works for whom? *International Dental Journal* **55**, 73-80.

General Dental Council (2008): *The First Five Years. Third Edition (Interim)*. London: General Dental Council.
Green, J. and South, J. (2006): Evaluation: Key concepts for public health practice. Berkshire: Open University Press.
Jöhren, P. Jackowski, J., Gängler, P., Sartory, G. and Thom, A. (2000): Fear reduction in patients with dental treatment phobia. *British Journal of Oral and Maxillofacial Surgery* **38,** 612-616.
Kvale, G., Berggren, U. and Milgrom, P. (2004): Dental fear in adults: a meta-analysis of behavioral interventions. *Community Dentistry and Oral Epidemiology* **32,** 250-264.
McGoldrick, P., Levitt, J., De Jongh, A., Mason, A. and Evans, D. (2001): Referrals to a secondary care dental clinic for anxious adult patients: implications for treatment. *British Dental Journal* **191,** 686-688.
McGrath, C. and Bedi, R. (2004): The association between dental anxiety and oral health-related quality of health in Britain. *Community Dentistry and Oral Epidemiology* **32,** 67-72.
Moore, R. and Brodsgaard, I. (2001): Dentists' perceived stress and its relation to perceptions about anxious patients. *Community Dentistry and Oral Epidemiology* **29,** 73-80.
Newton, J.T. and Buck, D.J. (2000): Anxiety and pain measures in dentistry: A guide to their quality and application. *Journal of the American Dental Association* **131,** 1449-1457.
Ronis, D.L. (1994): Updating a measure of dental anxiety: reliability, validity, and norms *Journal of Dental Hygiene* **68,** 220-223.
Schuller, A.A., Willumsen, T. and Holst, D. (2003): Are there differences in oral health behaviour between individuals with high and low dental fear? *Community Dentistry and Oral Epidemiology* **31,** 116-121.