A study to explore specific stressors and coping strategies in primary dental care practice

R. Bretherton,[1] H. R. Chapman*[2,3] and S. Chipchase[4]

VERIFIABLE CPD PAPER

IN BRIEF

- Describes specific stressors for dentists.
- Discusses the coping skills used by dentists.
- Discusses the perceived needs of a stress management package for dentists.

RESEARCH

Background and aims It is widely acknowledged that dentists experience occupational stress. This qualitative study aimed to explore previously identified specific stressors in more detail in order to inform the development of a future stress management programme. **Method** Two focus groups of dentists (N: 7 & 6) were conducted to explore, in more detail, nine specific stressors and concepts; being out of one's comfort zone, zoning out from the patient, celebrating the positive aspects of work, thinking aloud, the effect of hurting patients, the impact of perfectionism, responsibility for patient's self-care, the emotional impact of difficult situations as a foundation dentist. Participants were also asked for their views on the structure and contents of the proposed stress management package. Verbatim transcripts were subjected to thematic analysis. **Results and discussion** Dentists described the impact of these stressors and their current coping methods; thematic analysis revealed nine themes which covered the above concepts and a further overall theme of need for control. The findings are elaborated in connection to their relevant stress, coping and emotion psychological theory. Their implications for personal well-being and clinical outcomes are discussed. **Conclusion** Dentists' stressful and coping experiences are complex and it is essential that any stress management programme reflects this and that the skills are easily accessible and sustainable within the context of a busy dental practice.

INTRODUCTION

A state of 'stress' occurs when the situation is appraised as being psychologically or physically threatening and where one's coping strategies are, or are about to be, subjectively assessed as inadequate to meet the demands of the threat.[1] Stress is associated with an inability to cope with the levels of negative emotions (fear, anger, guilt etc) generated.[2] The coping strategies necessary to deal with different emotions may vary.[1]

Primary dental care practitioners are widely reported as finding their work stressful.[3] The stressors are remarkably consistent across time and country of practice.[4–8] The strategies used by dentists in an attempt to manage stress have also been assessed.[7,9] However, 'stress' is usually explored as the key emotional experience rather than as a response to an overwhelming underlying negative emotion.

Two comparatively time-intensive interventions based in the Netherlands[10,11] and the UK,[12] have been reported, and demonstrated some improvements in wellbeing. The former resulted in short-term benefits (reduction in burnout) which were lost at longer follow-up; the individuals who had the best outcomes were those who, once notified of their high burnout scores, acted independently to improve their wellbeing. The latter had a high (44%) drop-out rate and no long-term follow-up, though there were significant short-term improvements in scores on the General Health Questionnaire and non-significant changes in coping strategies at one month.

The anxiety which can underlie stress can result in poor decision-making such as an increased tendency to procrastinate over decisions.[13]

Previously reported qualitative research[9,14,15] has explored dentists' stressful situations, accompanying emotions and the coping strategies used. The authors intended to use these data to inform the design of a self-help, stress management package for dentists. However, the authors felt that they needed a better understanding of specific, previously identified areas in order to write the educational material. These areas were often associated with sub-optimal clinical decision-making or with potentially detrimental coping strategies. The areas of interest are described in Table 1.

In order to explore these topics, it was decided to use a focus group format, but instead of exploring a single topic such as 'what stresses you?' the authors structured the focus groups to explore, specifically, the above topics. Keeping the focus narrowed in this way, allowed the establishment of the limits of dentists' stressors and coping skills in these areas.

The authors worked on the assumption that any effective stress management programmes would necessarily be of easy and rapid use in the dental surgery so that access to strategies and maintained use were facilitated. They had no assumptions about the further details of stressors and coping which they hoped to elicit from participants.

The aims of this study were: 1) to elicit more details regarding specific topics revealed by the previous studies and which were deemed to be important in the development of dentists' coping skills; 2) to briefly explore the dentists' ideas regarding the information and format that would be useful as such in the package; and 3) to triangulate topics revealed in the previous study which have not been explored by others' research.

[1]Principal Lecturer for Enterprise; [3]Visiting Fellow; [4]Senior Lecturer, School of Psychology, University of Lincoln, Brayford Pool, Lincoln, LN6 7TS; [2]Paul Lowe Dentistry, 31 Farmhouse Way, Monkspath, Solihull, B90 4EH
*Correspondence to: H Chapman
Email: hchapman@lincoln.ac.uk

Refereed Paper
Accepted 6 April 2016
DOI: 10.1038/sj.bdj.2016.334
©British Dental Journal 2016; 220: 471–478

Table 1 Context and aims of study

Area of interest	What is known	Reason for further exploration
Working within one's comfort zone	Used to guide decisions, eg when to refer. Appeared to be subject to learning from experience.[9]	To understand how dentists knew they were in their comfort zone.
Sharing the emotions associated with difficult situations	Dentists were found[9] to be good at accessing technical support from colleagues, but less so at sharing the emotional impact; except for sharing anger by venting, which tends to be a unhelpful strategy.[16-18]	To understand this in greater detail so that more constructive coping could be suggested which dentists would find acceptable.
Recognition of the emotional impact of difficult situations by DF1 trainers	Trainees reported[9] that their trainers would help with practicalities, but were reluctant to help the trainees process the emotional impact of a difficult situation.	To triangulate the information.
Sharing positive experiences	Previous participants tended to report far fewer positive experiences, remembered them in less detail, and rarely shared them or celebrated them.[9,14]	A greater understanding of this reluctance would be helpful in the planning of resilience exercises as part of the self-help training.
Thinking aloud	The previous research[9,14] suggested that some stressful situations encountered by dentists, might be resolved by improved communication.	It was hypothesised that talking patients through a dilemma – problem solving aloud – might be a helpful strategy. We wanted to explore this option.
'Zoning out' from the patient	Used by dentists as a way of dealing with patient anxiety and difficult clinical situations.[9] It may be a way of avoiding the emotional and cognitive demands of emotional dissonance.[45,46]	To triangulate this information and explore it in greater detail.
The impact of hurting patients	Factor was not mentioned by any of the previous participants, but featured significantly in the literature.[4,5,7,19-22]	Contemporary exploration of the issue was needed.
The impact of perfectionism	Has been accepted as a stressor[8,23] but the previous study[14] found that perfectionism was a 'double-edge sword' functioning as a motivator for high clinical standards and a stressor when those standards were not met. This dichotomy is related to coping style.[24]	A deeper exploration of the dichotomy was important to inform the coping skills package.
Responsibility for patients' oral self-care	Patients' lack of responsibility for their oral health was a consistent source of frustration.[14]	A further exploration was needed to inform the training package.
A brief exploration of the requirements of a training package	To the best of the knowledge of the authors, this has not been explored before.	To inform the design of the training package.

METHOD

Participants

Ethical committee approval was obtained from the University of Lincoln, School of Psychology Research Ethics Committee.

A purposive sample[25] of 13 dentists (seven at Nottingham; six at Hull) was recruited from primary care dental practitioners who had volunteered via a form enclosed with an earlier epidemiological study.[26] The sample was chosen by HC (and reviewed by SYC) to represent as wide a cross section of dentists as possible with regard to practice type, age, gender and area of practice. Six (46%) of the dentists were female; ten (77%) worked in practices with at least some NHS commitment, of whom a total of three worked for a dental corporate organisation. There was one participant from the Community Dental Services (CDS), one from the armed forces and one DF1 (Year 1 Dental Foundation Trainee; a newly qualified dentist working in supervised practice) (Table 2). Reasons for cancellation were: an inconvenient date, urgent family commitments, and illness.

Participants received travelling expenses and loss of practice allowance.

Data collection

Focus groups were used to explore specific topics as they encourage the fuller development of ideas.[26] Two, 2-hour long groups were conducted as twilight sessions in conferencing facilities. The groups were facilitated by RB (a clinical psychologist who is experienced at leading focus groups) with the support of the HC (a primary care dentist). Issues of confidentiality and the right to withdraw without explanation were explained, the opportunity to ask questions given and informed, written consent obtained.

The researchers allowed the discussions to evolve using probes for clarification. Natural links in the discussion were used to introduce themes on the agenda (Table 3).

The groups were recorded using digital voice recorders, transcribed by a professional transcription service and checked for accuracy. A thematic analysis[27] was performed without the use of commercially available software. One author (HC) immersed herself in the data by reading and rereading the transcripts. Key passages were transcribed into word documents, each representing a theme. Some themes had sub-sections, identified by codes. Saturation (defined as a point where no new themes or concepts emerged)[28] was reached. The analysis was reviewed by SYC and RB and the quotes chosen by the three researchers in committee. One group of dentists requested sight of the draft paper before submission. This was duly sent and no comments were received.

The completely anonymised data from both groups are presented (group: paragraph).

Table 2 Description of participants

	Group 1	Group 2
Invited total participants	14	12
Cancelled/did not attend	7	6
Attended	7	6
Female	4	2
GDS Practice >75% NHS	3	4
GDS Practice mixed	0	1
GDS Practice <25% NHS	1	1
Corporate	1	2
CDS	1	0
Armed Forces	1	0
DF1	1	0
Mean year of qualification (range)	1999 (1983–2012)	1987 (1978–2007)

Table 3 Question guidelines for focus groups

1.	Do you have a 'comfort zone' when you are working?
2.	Many dentists chat to each other about difficult things that have happened or ask for technical advice. What do you think would happen if they talked about the emotional impact of difficult clinical scenarios as well?
3.	Do you celebrate and enjoy positive experiences in dental work?
4.	Thinking aloud. Do you share a clinical dilemma with the patient?
5.	Do you zone out from patients?
6.	If you become aware that you are hurting your patient how does that affect you?
7.	Perfectionism. How do high standards help and/or hinder your clinical work?
8.	Responsibility. How much responsibility should you feel for a patient's standard of oral self-care, or health?
9.	When you were DF1s (vocational trainees) would it have made a difference if the emotional impact of something that happening had been acknowledged?
10.	Feedback on training ideas

This is to meet the concerns of some of the members of one group about how the data would be presented and therefore facilitated discussion.

RESULTS AND DISCUSSION

Analysis of the data produced ten themes, some of which pertained precisely to the questions posed, and others arose from the participants' discussions. Themes fell into a set of 22 sub-themes or codes (Table 4).

Being outside one's comfort zone (Theme 1)

'Being outside one's comfort zone' was summarised as being *'about* [a lack of] *familiarity'* [1: 47].

Being out of one's comfort zone seems to equate with moderate to high levels of sympathetic nervous system arousal, and a consequent wariness. This is not fully blown hypervigilance;[13] a level of arousal which has deleterious effects on coping and may be as severe as panic. However it may be associated with poorer quality decision-making[13,29] and may be approaching the limits of psychological adaptability.[30]

Clinical challenges (Code 1)

Technically difficult situations were universally experienced. Changes in working environment and consequent loss of control were caused by situations such a lack of choice of materials available, or a relief nurse in the surgery:

'You're used to doing things in a certain way with a certain nurse [...] *your nurse is off sick and you have to work with a different one* [...] *and not everything is there ready for you'* [1:42].

Rapport with patients (Code 2)

One group felt that failing to establish rapport left one outside one's comfort zone:

'If you don't pick that up [lack of rapport] *quite quickly you can get into deep water'* [2:23].

Judgement of rapport was made quite quickly; as the patient walks through the door, or once treatment had started. Judgement of clinically difficult situations and of lack of rapport was based on *'gut instinct'* [1:73] body language, eye contact, noticing the patients' agitation and their responses. Lack of rapport led to communication and clinical difficulties.

'*You* [have to] *differentiate between them being apprehensive about what you're going to do when they're actually more prepared to be in conflict with what you're prepared to offer*' [2:18].

Unfortunately, these rapid, gut reactions may be a reflection of 'visceral bias'; an affective disposition to respond (ADR) or cognitive processing bias which can lead to poor decisions and the possibility of missed diagnoses.[29]

Attributions are inferences about the cause of one's own or another person's actions including beliefs about the causes of success or failure. Gut reactions to patients are a reflection of the fundamental attribution error, the biased interpretations of another's actions in which causes are attributed to dispositional causes (a personality or the person's attributes) rather than to situational causes (social /external causes).[32] This is a cognitive disposition to respond (CDR) and is highlighted as a source of clinical error.[29] People whose behaviour is 'difficult', may indeed be difficult but they may, equally, be anxious or seriously stressed themselves. Some individuals don't notice their anxiety and become angry and for others, it is less threatening to appear to be angry than frightened or sad.[32] Similarly, poor eye contact and defensiveness can be associated with a sense of shame[33] which might be related to fear or to the state of one's mouth.

Poor rapport could lead to dentists feeling pressured to undertake treatment they didn't agree with and a certain sense of exasperation when patients' recollection of events and information differed from those of the dentist:

'*How could you not remember what we were talking about* [...] *it's as if we'd never had the original conversations*' [2:45].

The problem of patients' 'inaccurate' memory of events in the surgery, as reported by participants, highlights the need to keep full and accurate clinical notes. A patient who is anxious will have biases in attention and recall of facts[34] so it is important to understand that inaccurate memory may

Table 4 Summary thematic analysis

Theme		Code	Example
1.	Being out of comfort zone	1. Clinical challenges	Different environment. Change in staff
		2. Rapport with patients	Poor communication. Treating patient who has complained
		3. Anxious patients	Dealing with patient anxiety
		4. Knowing you're out of your comfort zone	Physiological and behavioural responses
2.	Zoning out from the patient	5. Difficult clinical situations	Reduction in distractions
		6. Difficult patients	Patients who make you anxious
		7. Difficulties with money	NHS fees
3.	The role of perfectionism	8. The positives	Part of professionalism Reflection on self as clinician
		9. The negatives	The consequences of perfectionism: guilt, worry, being overwhelmed.
4.	Responsibility	10. Professional responsibility	Untoward event, toothaches
		11. Patient responsibility	Lack of patient responsibility
		12. Parental responsibility	Control of children in surgery
5.	Thinking aloud	13. Thinking aloud	Working through difficult decisions
6.	Relationship with nurses	14. Working relationship	Mentoring
		15. Friendship	Talking things through
7.	Sharing emotions	16. Negative emotions	Seeing the negatives only
		17. Positive emotions	Photographing best work
8.	Hurting patients	18. Hurting patients	Empathising with patient
9.	Control	19. Regulations	Seeing patients who have complained
		20. Being employed	Lack of control
		21. Clinical situations	Being in comfort zone and in control
10.	Stress management training needs	22. Stress management training needs	Individual, ease of access and use

not necessarily be conscious on the part of the patient. This problem can be mitigated by the use of written information sheets or a personalised summary for the patient to take away and peruse when they are not anxious.

The ultimate stressor of this type was when the relationship had broken down to the point of litigation, which was compounded by still having to treat the complainant:

'*He sued me* [...] *and all that time he still insisted on being my patient* [...] *and my defence union said, whatever you do,* [...] *keep looking after him, and we did. [and now] every time this patient comes in I am absolutely guarded because I'm waiting for the next complaint and it's horrible*' [2:56].

The obligation to carry on treating these patients is now stated in the GDC Standards.[35] However, this places the clinician in an invidious position. It also leaves the patient more vulnerable as the fear and stress provoked by the situation are likely to leave the dentist at increased risk of poor decision-making and clinical errors.[13,36,37]

Recent experimental research[38,39] has shown that difficult patients (demanding, aggressive, helpless, and those who ignore the doctor's advice, who do not expect to be taken seriously by the doctor or who question the doctor's competence) distract the doctor. In comparison to 'neutral patients, there is an increased rate of diagnostic error, particularly so for difficult diagnostic conditions. Reflection improved diagnostic accuracy, but not enough to make up for the impact of disruptive behaviours. This increase in error is ascribed to the cognitive effort of dealing with the disruptive behaviours, reducing the cognitive capacity available for the diagnostic process itself. This also infers that being forced to continue to treat a litigious or complaining patient is not in the best interests of the patient.

Anxious patients (Code 3)

Treating anxious patients and '*dealing with their projected anxiety*' [2:195] was a major stressor for the vast majority of dentists because of the vicious circles which can arise:

'*If someone's worried then you become a bit anxious as well*' [2:197].

Dentists' coping was described as:

'*Trying to absorb it for them,* [...] *you just feel that if I deal with their anxiety then they can cope*' [2:213].

There are inherent 'dangers' in this strategy; it leads to significant physiological arousal and stress. It implies; 1) that the dentists did not feel able to help the patients overcome their fears; and 2) that they felt a lack of control of the situation. This reflects the findings of previous research[40] which found that 91% of dentists felt stressed when treating anxious patients and 65% felt that their undergraduate training in psychological techniques to help patients was inadequate. Forty four percent would have been interested in extra training, given financial support. It also requires a change in funding policy to recompense practitioners for the extra time taken in treatment until the patient's anxiety is reduced.

Knowing you're out of your comfort zone (Code 4)

Dentists used physiological and behaviour indicators of being out of control: feeling uncomfortable or hot; having an increased heart rate; or being '*very grumpy*' [1:39].

Zoning out from the patient. (Theme 2)

These dentists described three situations in which they coped by 'zoning out'.

Difficult clinical situations (Code 5)

Distractions were reduced, for example by turning off the radio, which served several purposes;

'*You've changed the environment* [which] *makes you concentrate more intensely* [...] *I can feel more in touch with what I'm doing, my nurse knows that I'm feeling stressed,* [that] *I'm getting myself into deep water here* [and] *therefore she psychologically ups a gear and* [...] *you've changed it with the patients*' [2: 141-143].

Auditory and visual distractors, particularly if relevant to another goal, can reduce the efficiency of cognitive processing.[41] Music is used to distract patients and reduce anxiety and there is some evidence for its effectiveness.[42] However, students who listened to music while studying were subject to more distraction from other sources than those who did not.[43] To the best of our knowledge, there has been no investigation of the impact of auditory distraction on the ability of the dentist. Music may be less of a problem than the radio, particularly those programmes with large 'chat' components, which may well be more attention-grabbing.

The reduction in external stimulation also extended to zoning out from the patient as a person, developing tunnel vision and locking onto the tooth as an object or being totally detached from the surroundings:

'*I have to sort of block myself away and focus on the task* [...] *I have to cut everything else out*' [1:126].

Zoning out also appears to be have been used as a means of dealing with emotionally difficult situations, where there is a discrepancy or emotional dissonance between the felt emotion and that which one must display as a 'professional.'[44]

The effort involved in disguising emotions is emotional work. Acting is the most stressful part of emotional work.[45] The cognitive load of acting and consequent impairment of mental performance such as memory and decision-making[46] may well lead to an increased risk of clinical errors.[37] Thus it is possible that a vicious circle is formed.

Difficult patients (Code 6)

These were coped with by distancing:

'*Zoning out is something that you employ [when] you think, oh, that [difficult] patient's coming back again*' [1:228].

Difficulties with money (Code 7)

NHS dental changes are beyond dentists' control and yet it is they (or their staff) who receive the expressions of dissatisfaction from patients:

'*I've also learnt to zone out the patients who will complain, "oh that's so expensive"*' [1:209].

As yet, there is little known about the effect that dentists' 'zoning out' may have on patient perceptions of the clinical encounter. However, participants in a recent study[47] reported feelings of dehumanisation:

'When reflecting on negative aspects of care, many participants reported a sense of dehumanisation that resulted from not feeling listened to, cared for, or seen as an entire human being in oral health settings. In the process of dehumanisation, patients may feel their needs are somehow secondary or unimportant' (p 1204).

Perfectionism (Theme 3)

Perfectionism may be viewed as positive (adaptive; a challenge) or negative (maladaptive; a stressor).[24] Both aspects were provoked by clinical work.

The positives (Code 8)

Perfectionism and having high expectations of the self were universally viewed as an integral part of professionalism:

'*That patient will eventually go somewhere else and it's my work in their mouth*' [1:229].

The negatives (Code 9)

Differing senses of what might be realistic to strive for were apparent:

'*If I don't get everything right all the time, then I've had a bad day*' [1:172] and '*the shade's not quite right,* [...] *you think actually I could've done that better*' [1.55].

However, the demands of producing perfect work all the time were felt to apply phenomenal and overwhelming amounts of pressure such that:

'*every time something goes wrong you feel as though, this time you haven't got your brolly*' [2:192].

And the strain was felt to be intensifying:

'*In this last eight years it's got really, really bad, really bad*' [2:194].

There were also feelings of guilt associated with not meeting one's expected standards and failing the patient:

'*You're trying to provide them the best level of care and it doesn't quite work out, then I get a bit stressed about that, because you feel you've failed the patient*' [1:153].

These stressors resulted in rumination, sleep disturbance and a focus on negative events:

'*It's not helpful for me going back to the point of seeing the positive things. I will only see the negatives*' [1:159].

High levels of negative perfectionism and associated rumination, regret and self-blame are associated with depression[48] and burnout.[49]

Responsibility (Theme 4)

Professional responsibility (Code 10)

All dentists acknowledged that they have a responsibility for their clinical work, but even doing the job well does not allow them to shelve feelings of responsibility:

'*You might explain to the patient that eventuality X, Y or Z might happen* [...]*, if it does, then I sometimes still feel responsible for it*' [2:264].

Patient responsibility (Code 11)

There was a perception that dentists were responsible for their patients' oral health which the patient him/herself had abrogated. This resulted in a deep sense of frustration with patients' lack of self-efficacy and possibly a weaker sense of control of the clinical situation:

'*How many times can you tell a patient they need to brush their teeth twice a day, some of them don't even do it and when you ask them why,* [...] [they reply]*, oh I just can't find the time*' [1:417].

It is likely that there is some unvoiced anxiety associated with patients' unwillingness to heed the advice given; the real risk of an accusation of 'supervised neglect.' The reality is that one cannot change another person's behaviour; they have to want to change.[50]

It was felt that the 'new contract' would make decisions easier by removing emotions and being able to explain that '*I can't do it because that's not the service that we provide*' [1:413].

Parental responsibility (Code 12)

Responsibility for child patient behaviour was a source of stress, with the presence of the parent complicating the situation, especially their inept attempts at parental control:

'*the mother's shouting at the kid* [...] *and you're there trying your best to gently persuade the child to open its mouth*' [1:292].

Thinking aloud (Theme 5) (Code 13)

Problem solving aloud to the patient had two main functions: 1) checking one's own thought processes:

'*You're just checking subconsciously that you're going through the correct stages in your own mind*' [1:78]

Or 2) trying to lower patient expectations:

'*It's almost trying to take pre-emptive action*' [1:88].

It was used by participants as a means of facilitating informed consent. However, it is known that, in medical consultations, expressing scientific uncertainty leads to lower patient decision satisfaction at the time of consultation.[51] This may have an impact on dental patients faced with an explanation that a desired treatment may not be feasible. Research in this area is needed.

Professional relationship with nurses (Theme 6)

There were two identified aspects to nurses' smooth running of the surgery.

Working relationship (Code 14)

For one group of dentists, the relationship with their nurses centred entirely around their ability to work together efficiently, which was based on experience and time together and was achieved by mentoring and praise. This '*foster*[s] *a sense of common purpose, ... If everybody's then working to the same goal, ...that gives a sense of achievement*' [2:343].

Friendship (Code 15)

The second group described closer relationships; being friends with staff. This closeness provided immediate emotional support in difficult situations and permitted memories to be shared, facilitating a 'debrief' after difficult clinical situations. This matched the experience of dentists in a previous study:[9]

'*I just talk to my nurse and sometimes it's really helpful because she was a witness to what just happened*' [1:376].

This latter group is in contrast to previous research[52] which found high levels of interpersonal disgruntlement of dentists with dental nurses and vice versa.

The difference between the groups may reflect the fact that the first group had a greater proportion of men. Gorter *et al.*[53] found that male dentists preferred more 'business like' (eg, 'I find that talking about private matters with my dental nurse disturbs the employer/employee role pattern') and gender interacting styles (a preference for male dentist/female dental nurse working combination). Also, the first group had been qualified, on average ten years longer than the second group, so the difference in working relationship might also reflect a generation difference, with older dentists preferring a more formal relationship.

Social support functions as a moderator between work stressors or hassles and psychological distress[54,55] and physiological health outcomes.[56] This may be one reason that dentists in larger practices suffer fewer signs of burnout.[57] It also highlights the importance of clinical gatherings for those who work in isolation such as dentists in the CDS.

Sharing emotions (Theme 7)

Peer support usually involved sharing technical difficulties. However, emotions, especially positive emotions, appeared to be rarely discussed. Some felt that, given the opportunity, sharing experiences and emotions was beneficial, while others avoided doing so.

Negative emotions (Code 16)

Dentists reported that they selectively noticed the negative events in their work. This was partially ascribed to tempting fate. It was observed that they tended to do this less with experience:

'*I'm better at not going over things, and I used to go over things far, far too much*' [1:341].

Positive emotions (Code 17)

There was an acknowledgement that positive events often went unrecognised, though some were happy to share good clinical work with colleagues, in particular the nurse, and the patient:

'*You would be very happy and you want to tell the nurse*' [1:345].

Although DF1 dentists are taught to reflect on what went well before they dissect the negatives, this can be dismissed as a platitude:

'*I do talk to my trainer; she's always positive, very positive. Then I think, well she's my trainer she's not going to be negative is she?*' [1:308].

Former DF1s recognised the tendency for DF1s' peer to peer conversations to be problematic:

'*I'd* [relate something that happened] *and* [my friends say], *oh that's nothing and* [...] *then it just goes round and round, sometimes we just don't have the time to talk about the positives*' [1:103].

As found previously,[14] these dentists recognised their tendency to focus on sharing negative events and emotions, but they also were skilled at noting the positive emotions they experienced. The impact of daily hassles (low grade, chronic stressors)[1] and the consequent negative emotions can be mitigated by the conscious noting of positive events;[58] the 'broaden-and-build' theory of building resilience.[59]

Based on the experience of the study participants, it is essential that any positive feedback from DF1 trainers is perceived as credible. DF1 dentists need to be placed on their guard about the natural instinct to engage in competitive 'worst scenarioship' as this is far from socially supportive.

Hurting patients (Theme 8) (Code 18)

These dentists did not feel that patients' attributions about any discomfort felt in the surgery were an issue. Pain associated with anxiety needed to be dealt with by appropriate clinical interventions such as dressing a sensitive tooth and empathy:

'*Quite often what you'll get is, all dentists are pain causing b***s, except you of course, you're great, that's why I'm here*' [2:273].

Control (Theme 9)

Throughout the sessions, the theme of (threat of) loss of control emerged repeatedly as something which caused stress.

Regulations (Code 19)

The layers of evolving regulation from bodies such as Care Quality Commission (CQC), the Primary Care Trusts (PCT) (Now Clinical Commissioning Groups [CCGs]) and General Dental Council (GDC) (especially with regards to having to continue to treat patients who have complained), together with the Units of Dental Activity (UDA) fee structure, were universal stressors:

'*I find stress* [in clinical situations] *easier to handle than the stress that's outside your control* [such as] *contracts and money*' [2:123].

It was felt that the regulations and the need to be ethical removed choices about financial viability. This produced '*enormous stress*' [2:59] as it resulted in ethical dilemmas:

'*I either have to fib to the patient which I'm really not* [prepared to do][...] *or you have to find some way to stage the treatment which leaves you at risk from the GDC and*

everybody else. Or you just get on with it and you spend from your own pocket and your family suffer' [2:59-70].

Being employed (Code 20)

Being an employee brought its own, specific set of stressors:

'*There's a certain level in a large corporate practice where there's so many things that are out of your control, it gets to the point where you're saying to your practice manager, we don't have these materials, this nurse is rude to the patients, this nurse wants to leave at five and then it's just me nagging her all the time*' [2:365].

Clinical situations (Code 21)

Persons accompanying patients, particularly children's parents were a universal source of stress. Failures of rapport, treating anxious patients (Codes 2 & 3) and clinically challenging situations were viewed as:

'*situation[s] where you're not in control anymore*' [1:123].

Running late was universally viewed as stressful. Attempts were made to mitigate anxiety by controlling the daybook:

'*Looking at a day that's coming up and thinking, oh no I'm not having her in and her together because they're both* [anxious] *would leave me feeling* [stressed]' [2:218].

The control-stress relationship is complex; too much control can be just as stressful as too little control. As a generalisation, stress is felt when there is a discrepancy between the levels of desired control and levels of perceived or objective control.[60] For example, the dentist will try to help the patient control his/her disease, but the patient may choose not to cooperate, leaving the dentist feeling out of control of the situation and with the possible threat of malpractice hanging over him/her. Shared decision-making[61] and the focus on patient centred care[62] are to be welcomed as entirely appropriate, but are other potential sources of threat to the dentist's sense of control and hence stress.[63] This can occur when there is a mismatch between a patient's preferred decision-making style and the one encountered in practice[64] or when a clinician experiences decisional conflict; 'personal uncertainty about which course of action to take when choice among competing options involves risk, regret, or challenge to personal life values' (p 61).[63] Clinician uncertainty appears to be influenced by patient uncertainty.[63]

Theme 10: Stress management training needs (Code 22)

In order to establish the type of intervention that might be useful for busy practitioners, training was discussed. The participants were clear that training in stress management would be helpful, but had to be capable of individuation.

'*Everyone copes differently with stress ... some person might find yoga helps or another person might find running a marathon helps.*' [2:383]

Some recognised that a stress management package should contain skills which were readily used within the practice environment, whilst others, despite increasingly focused and direct questioning, focused on skills which could be used outside the surgery. Obstacles to use in practice were highlighted;t

'*the time pressures, financial pressures*' [1:361]; and '*you've got patients coming at you left, right and centre and you don't have time to say, I'll just take 10 minutes out and just think about what happened, you haven't the time because your other patient's outside*'[1:365].

It was recognised that there is a need for increased coping ability which was largely ascribed to: 1) the lack of experience of newly qualified dentists; 2) the difficulty in transferring from the foundation training year into an unsupported job; and 3) the current need for shared decision-making with the patient:

'*In those days it was doctor knows best culture [...] that was a lot easier to manage when patients were, right what do I need doctor, do it, that's not the same way anymore. I think that was always easier to manage where you felt you were in charge and you, right we're going to do this and the patient never said yes or no, they'd just let you do it*'[2:403].

Even though some individuals would demonstrate a lack of insight:

'*People would think, oh that doesn't apply to me*' [2:386] it was felt that training was needed for dental students. This opinion is borne out by a significant body of evidence relating to the stress experienced by dental students.[65] However, in a recent study[66] only 11% of undergraduates stated that they would find a stress management app for a smart phone helpful. The dentists felt that stress management training would need to be distinguished from communication skills training, which some felt was aimed at '*communicat*[ing] *to avoid legal problems*' [2:383].

The authors are unaware of any literature relating to stress in DF1s.

The following specific suggestions were made:

'*You'd have to come up with a tool that could be done very quickly and perhaps be used to then reflect on at a later date*' [1:365]; and '[...] *it's almost like we should be reflecting on, after every patient, subconsciously* [...] *It might be something like PDP but for all practitioners where you quickly write something down, good or bad, a particular incident* [...] *a bit like a speedy peer reflective type [...] and you can refer back to it at a later date*' [1:367-374].

One dentist suggested that debriefing could be like '*when you do theatre lists you know you're meant to do the World Health Organisation thing, ... at the end, after each patient, you're all meant to stand there and everyone's meant to have their opportunity to say if anyone had any emotions about the situation, and you're meant to debrief after each.*' This appears to be referring to critical incident stress debriefing (CISD) or critical incident stress management (CISM). This is a controversial technique which is used to debrief healthcare and emergency workers after traumatic events in an effort to mitigate the effects of the experience and prevent the development of post-traumatic stress disorder (PTSD). This is usually run by a trained facilitator and the research on efficacy has found mixed results, with some studies finding an increase in psychiatric symptoms after its use.[67] While trained surgeons and surgical trainees can report the necessary stages of the process, they were not put into practice; professional culture being identified as a barrier to implementation.[69] These facts suggest it is impractical for the dental surgery.

In summary, although this study used a small sample of volunteer dentists and might be viewed as unrepresentative, their expressed views reflected those in the previous dental literature,[3,4,9,14] and the focus group format has allowed a greater depth of understanding to be conveyed. It has also allowed the 'consumers' of any training developed to have an input into its design.

CONCLUSION

Many of the discussions coded above conveyed the overarching impression that there was a meta-theme to the discussion: it was tough being a dentist; '*It's not an easy job actually*' [2:414], thus validating the conclusion of Myers & Myers.[69]

Dentists experience stress at work from a wide variety of sources, some of which fall within their control and others, such as regulations, fall completely outside their control. The coping mechanisms which are likely to be useful in one set of circumstances are unlikely to be helpful in another. It is vital that these factors are taken into account in any intervention designed to alleviate stress in dentists. Key factors to be addressed should include techniques to keep dentists within their comfort zone, to broaden the zone by increasing psychological resilience;

improving the recognition and celebration of positive emotional experiences and encouraging emotional support offered by colleagues. It is also important that any stress management programme is quickly and easily accessed and that the techniques suggested are sustainable in busy practice in the longer term. Reduced stress levels should result in improved patient care and safety by improving dentists' decision-making and reducing clinical 'accidents.'

Acknowledgements
The authors are indebted to the Shirley Glasstone Hughes Trust for funding this project and to the dentists who gave generously of their precious time.

1. Lazarus R S, Folkman S. *Stress, Appraisal, and Coping*. New York: Springer Publishing Company, 1984.
2. Aldwin CM. *Stress, coping, and development: An integrative perspective*. New York: Guilford Press, 1994.
3. Gorter R C, Albrecht G, Hoogstraten J, Eijkman M A. Measuring work stress among Dutch dentists. *Int Dent J* 1999; **49:** 144–152.
4. Cooper C L, Mallinger M, Kahn R. Identifying sources of occupational stress among dentists. *J Occ Psychol* 1978; **51:** 227–234.
5. Cooper C L, Watts J, Baglioni A J, Kelly M. Occupational stress among general practice dentists. *J Occ Psychol* 1988; **61:** 163–174.
6. Humphris G M, Cooper C L. New stressors for GDPs in the past ten years: a qualitative study. *Br Dent J* 1998; **185:** 404–406.
7. Ayers K M, Thomson W M, Newton J T, Rich A M. Job stressors of New Zealand dentists and their coping strategies. *Occup Med (Lond)* 2008; **58:** 275–281.
8. Moller A T, Spangenberg J J. Stress and coping among South African dentists in private practice. *J Dent Assoc S Afr* 1996; **51:** 347–357.
9. Chapman H R, Chipchase S Y, Bretherton R. Understanding emotionally relevant situations in primary dental practice. 2. Reported effects of emotionally charged situations. *Br Dent J* 2015; **219:** E8.
10. Gorter R C, Eijkman M A, Hoogstraten J. A career counseling programme for dentists: effects on burnout. *Patient Educ Couns* 2001; **43:** 23–30.
11. Brake H T, Gorter R, Hoogstraten J, Eijkman M. Burnout intervention among Dutch dentists: long-term effects. *Eur J Oral Sci* 2001; **109:** 380–387.
12. Newton J T, Allen C D, Coates J, Turner A, Prior J. How to reduce the stress of general dental practice: the need for research into the effectiveness of multifaceted interventions. *Br Dent J* 2006; **200:** 437–440.
13. Janis I L, Mann L. *Decision-making*. New York: The Free Press, 1977.
14. Chapman H R, Chipchase S Y, Bretherton R. Understanding emotionally relevant situations in primary care dental practice. 1. clinical situations and emotional responses. *Br Dent J* 2015; **219:** 401–409.
15. Chapman H R, Chipchase S Y, Bretherton R. Understanding emotionally relevant situations in primary dental care practice. 3. Developing narratives. Br Dent J 2015; **219:** 491–496.
16. Lohr J M, Olatunji B O, Baumeister R F, Bushman B J. The psychology of anger venting and empirically supported alternatives that do no harm. *The Scientific Review of Mental Health Practice: Objective Investigations of Controversial and Unorthodox Claims in Clinical Psychology, Psychiatry, and Social Work* 2007; **5:** 53–64.
17. Stone A A, Kennedy-Moore E, Neale J M. Association between daily coping and end-of-day mood. Health Psychol 1995; **14:** 341–349.
18. Montero-Marin J, Prado-Abril J, Piva Demarzo M M, Gascon S, Garcia-Campayo J. Coping with stress and types of burnout: explanatory power of different coping strategies. *PLoS ONE* 2014; **9:** e89090.
19. Cooper C L, Watts J, Kelly M. Job satisfaction, mental health, and job stressors among general dental practitioners in the UK. *Br Dent J* 1987; **162:** 77–81.
20. Cooper C L, Mallinger M, Kahn R L. Dentistry: What causes it to be a stressful occupation? Int Rev App Psychol1980; **29:** 307–319.
21. O'Shea R M, Corah N L, Ayer W A. Sources of dentists' stress. *J Am Dent Assoc* 1984; **109:** 48–51.
22. Gorter R C, Albrecht G, Hoogstraten J, Eijkman M A. Professional burnout among Dutch dentists. *Community Dent Oral Epidemiol* 1999; **27:** 109–116.
23. Zakher R, Bourassa M. Stress factors and coping strategies in the dental profession. *J Can Dent Assoc* 1992; **58:** 905–911.
24. Bergman A J, Nyland J E, Burns L R. Correlates with perfectionism and the utility of a dual process model. *Pers Ind Diff* 2007; **43:** 389–399.
25. Cleary M, Horsfall J, Hayter M. Data collection and sampling in qualitative research: Does size matter? *J Adv Nurs* 2014; **70:** 473–475.
26. Chipchase S Y, Chapman H R, Bretherton R. Dentists' decision-making style and anxiety about clinical decision-making. *Br Dent J*. in preparation. 2015.
27. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006; **3:** 77–101.
28. Trotter RTI. Qualitative research sample design and sample size: Resolving and unresolved issues and inferential imperatives. *Prev Med* 2012; **55:** 398–400.
29. Croskerry P. Cognitive and Affective Dispositions to Respond. *In* Croskerry P, Cosby K, Schenkel S, Wears R (eds) *Patient Safety in Emergency Medicine*. pp 219–227. Philadelphia: Lippincott, Williams & Wilkins; 2008.
30. Hancock P A, Warm JS. A dynamic model of stress and sustained attention. *Hum Fact* 1989; **31:** 519–537.
31. Eikeland H L, Ornes K, Finset A, Paedersen R. The physician's role and empathy- a qualitative study of third year medical students. *BMC Med Educ* 2014; **14:** 165.
32. Linehan MM. *Skills training manual for treating borderline personality disorder*. New York: Guilford Press, 1993.
33. Ekman P. *Emotions Revealed- Understanding Faces and Feelings*. London: Phoenix, 2004.
34. Williams J M, Watts F N, MacLeod C, Mathews A. *Cognitive Psychology and Emotional Disorders*. 2nd ed. Chichester: John Wiley & Sons, 1997.
35. General Dental Council. *Standards for the Dental Team*. London: General Dental Council, 2013.
36. Croskerry P, Abbass A, Wu A W. Emotional influences in patient safety. *J Patient Saf* 2010; **6:** 199–205.
37. Tsutsumi A, Umehara K, Ono H, Kawakami N. Types of psychosocial job demands and adverse events due to dental mismanagement: a cross sectional study. *BMC Oral Health* 2007; **7:** 3.
38. Mamede S, Van Gog T, Schuit S C E *et al*. Why patients' disruptive behaviours impair diagnostic reasoning: a randomised experiment. *BMJ Quality Safety* 2016: DOI:10.1136/bmjqs-2015-005065.
39. Schmidt H G, Van Gog T, Ce Schuit S *et al*. Do patients' disruptive behaviours influence the accuracy of a doctor's diagnosis? A randomised experiment. *BMJ Quality & Safety* 2016; DOI:10.1136/bmjqs-2015-004109.
40. Hill K B, Hainsworth J M, Burke F J, Fairbrother K J. Evaluation of dentists' perceived needs regarding treatment of the anxious patient. *Br Dent J* 2008; **204:** E13.
41. Craik FIM. Effects of distraction on memory and cognition: A commentary. *Frontiers Psychol* 2014; 5.
42. Gordon D, Heimberg R G, Tellez M, Ismail Al. A critical review of approaches to the treatment of dental anxiety in adults. J Anxiety Disord 2013; **27:** 365-378.
43. Calderwood C, Ackerman P L, Conklin E M. What else do college students 'do' while studying? An investigation of multitasking. Comp Edu 2014; **75:** 19–29.
44. Bakker A B, Heuven E. Emotional dissonance, burnout, and in-role performance among nurses and police officers. *Int J Stress Manage* 2006; **13:** 423–440.
45. Zapf D, Holz M. On the positive and negative effects of emotion work in organizations. *Euro J Work Org Psychol* 2006; **15:** 1–28.
46. Hulsheger U R, Schewe A F. On the costs and benefits of emotional labour: A meta-analysis of three decades of research. *J Occup Health Psychol* 2011; **16:** 361–389.
47. Raja S, Shah R, Hamad J, Van K M, Kupershmidt A, Kruthoff M. Patients' Perceptions of dehumanization of patients in dental school settings: implications for clinic management and curriculum planning. *J Dent Educ* 2015; **79:** 1201–1207.
48. Rudolph S G, Flett G L, Hewitt P L. Perfectionism and deficits in cognitive emotion regulation. *J Ration Emot Cogn-Behav Ther* 2007; **25:** 343–357.
49. Flaxman P E, Ménard J, Bond F W, Kinman G. Academics' experiences of a respite from work: Effects of self-critical perfectionism and perseverative cognition on postrespite well-being. *J App Psychol* 2012; **97:** 854–865.
50. O'Doherty KM. *The Little Book of Thinking Errors*. London: Cognitive Therapy Books, 2009.
51. Politi M C, Clark M A, Ombao H, Dizon D, Elwyn G. Communicating uncertainty can lead to less decision satisfaction: A necessary cost of involving patients in shared decision-making? *Health Expect* 2011; **14:** 84–91.
52. Blinkhorn AS. Stress and the dental team: a qualitative investigation of the causes of stress in general dental practice. *Dent Update* 1992; **19:** 385–387.
53. Gorter R C, Freeman R. Dentist-assistant communication style: perceived gender differences in the Netherlands and Northern Ireland. *Community Dent Oral Epidemiol* 2016; **33:** 131–140.
54. Frese M. Social support as a moderator of the relationship between work stressors and psychological dysfunctioning: A longitudinal study with objective measures. *J Occup Health Psychol* 1999; **4:** 179–192.
55. DeLongis A, Folkman S, Lazarus R S. The impact of daily stress on health and mood: Psychological and social resources as mediators. *J Pers Soc Psychol* 1988; **54:** 486–495.
56. Kanner A D, Coyne J C, Schaefer C, Lazarus R S. Comparison of two modes of stress measurement: Daily hassles and uplifts *versus* major life events. *J Behav Med* 1981; **4:** 1–39.
57. Croucher R, Osborne D, Marcenes W, Sheiham A. Burnout and issues of the work environment reported by general dental practitioners in the United Kingdom. *Community Dent Health* 1998; **15:** 40–43.
58. Fredrickson BL. Cultivating positive emotions to optimize health and well-being. Prev Treat 2000; 3.
59. Tugade M M, Fredrickson B L. Resilient individuals use positive emotions to bounce back from negative emotional experiences. *J Pers Soc Psychol* 2004; **86:** 320–333.
60. Averill JR. Personal control over aversive stimuli and its relationship to stress. *Psychol Bull* 1973; **80:** 286–303.
61. Kalsi J S, Haemmings K. The influence of patients' decisions on treatment planning in restorative dentistry. *Dent Update* 2013; **40:** 698–700, 702–4, 707–8, 710.
62. Asimakopoulou K, Gupta A, Scambler S. Patient-centred care: barriers and opportunities in the dental surgery. *Community Dent Oral Epidemiol* 2014; DOI:10.1111/cdoe.12120.
63. LeBlanc A, Kenny DA, O'Connor A M, Legare F. Decisional conflict in patients and their physicians: A dyadic approach to shared decision-making. *Med Dec Mak* 2009; **29:** 61–68.
64. Murray E, Pollack L, White M, Lo B. Clinical decision-making: Patients' preferences and experiences. *Pat Edu Counsel* 2007; **65:** 189–196.
65. Alzahem AM, van der Molen H T, Alaujan A H, Schmidt H G, Zamakhshary M H. Stress among dental students: a systematic review. *Eur J Dent Educ* 2011; **15:** 8–18.
66. Khatoon B, Hill K B, Walmsley A D. Dental students' uptake of mobile technologies. *Br Dent J* 2014 27; **216:** 669–673.
67. Arendt M, Elklit A. Effectiveness of psychological debriefing. *Acta Psychiatrica Scandinavica* 2001; **104:** 423–437.
68. Ahmed M, Sevdalis N, Vincent C, Arora S. Actual vs perceived performance debriefing in surgery: practice far from perfect. Am J Surg 2013; **205:** 434–440.
29. Myers H L, Myers LB. 'It's difficult being a dentist': stress and health in the general dental practitioner. *Br Dent J* 2004; **197:** 89–93.